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ON

JAUNDICE: WITH SPECIAL REFERENCE TO TYPES OCCURRING DURING THE WAR.*

BY WILLIAM HENRY WILLCOX, C.B., C.M.G.,
M.D LOND., F.R.C.P.LOND., COLONEL A.M.S.,
PHYSICIAN TO OUT-PATIENTS, ST. MARY'S HOSPITAL, LONDON.

LECTURE I.—PATHOLOGY, DIAGNOSIS, AND TREATMENT.

THE subject of these lectures—"Jaundice: with special reference to types occurring during the war"—was chosen because it has aroused during the period of the war a great deal of interest, owing to the many new types studied and brought to notice, and because during the last four and a half years a great deal of original work has been carried out on this important subject.

I have personally had the privilege of studying closely some of the new types of jaundice. Thus, in November, 1914, at my out-patient department at St. Mary's Hospital, London, I examined the first case of jaundice recorded[1] as being directly due to the inhalation of the vapour of tetrachloride of ethane; an investigation of this case led on to the discovery of the cause of an outbreak of toxic jaundice occurring at that time amongst aeroplane workers in this country. In this research[2] Dr. T. M. Legge, His Majesty's Medical Inspector of Factories, and Dr. B. H. Spilsbury, pathologist of St. Mary's Hospital, London, collaborated.

In 1914 and previously the toxicology of the arsenobenzol compounds had been a subject of great interest to me, especially in its relation to toxic jaundice, and in 1916, in conjunction with Mr. John Webster, F.I.C., a record of this work was published.[3]

In 1915 and 1916, while serving with the Mediterranean Expeditionary Force as consulting physician, I saw a very large number of cases of epidemic jaundice, both in Egypt and in the Dardanelles.

From 1916 to 1919, whilst serving with the Mesopotamian Expeditionary Force as consulting physician, I have had the opportunity of seeing a very large number of cases of jaundice of epidemic type similar to those occurring in the Dardanelles, and also a large number of cases due to such infections as paratyphoid, enteric, and relapsing fever, malaria, etc.

HISTORY.

The word "jaundice" is derived from the French *jaune* (yellow). Wickham Legg gives[4] several possible derivations for icterus in his work on *Bile, Jaundice, and Bilious Diseases*—namely, "ἴκτις, the yellow-breasted marten; ἴκτερος, the golden oriole, the sight of which was supposed to cure jaundice, whereas the bird died (Pliny); and ἴκτινος, a kite, from the colour of its eyes."

DEFINITION.

Osler gives the following brief but excellent definition: "Jaundice or icterus is a condition characterized by coloration of the skin, mucous membranes, and fluids of the body by the bile pigment." It must be remembered that jaundice, like albuminuria, is a symptom, and not a disease, and may be met with in a variety of conditions, the common and essential factor being obstruction at some point to the passage of bile along the bile capillaries or ducts.

HISTORICAL.

Jaundice has attracted a great deal of attention in medical literature from the earliest times. There are frequent references to it in the writings of Hippocrates, Galen, and Celsus. Dr. Redman Coxe of Philadelphia, in his work[5] on the writings of Hippocrates and Galen, gives the following extracts from Hippocrates on the subject:

When jaundice occurs in ardent fever on or after the seventh day, with difficult yet abundant expectoration and the fever does not decline, it denotes that instead of terminating as above an abscess will form in some great tumour with severe pains, or a colliquation from the great heat of the humours.

This is quite a good description of the jaundice of septicaemia or pyaemia. Again from Hippocrates we have:

But in whatever manner ardent fever ends, if jaundice succeeds, sweats and abscesses rarely follow but recovery ensues.

And also from the same author:

If in violent fevers jaundice appears on the seventh, ninth, or fourteenth day, it is favourable provided a hardness does not occur in the right hypochondrium. If so, it is of doubtful character.

Hippocrates gives a guarded prognosis, evidently being familiar with the dangers of suppurative cholecystitis.

Bile was used as a remedy for internal use from the earliest times. Fel bovinum of the *Pharmacopoeia* is a preparation consisting mainly of salts of the bile acids. Modern research, resulting in the discovery of the bile acids, has led to the use of these constituents of bile as valuable remedies in certain abdominal conditions—for example, cholelithiasis, hepatic conditions, constipation, etc.

In more recent times the exact causation of the various forms of jaundice has led to most interesting discussions, of which full accounts are to be found in the writings of Murchison, Wickham Legg, Budd, Frerichs, Moxon, George Harley, and later of Hunter and Rolleston. Reference to the work done during the war will be made later.

CAUSES.

We shall do well to regard jaundice as being due to a variety of causes. When the great number of chemical poisons which may produce toxic jaundice of similar type is considered we are forced to admit that there must be at least as many bacterial poisons, probably more, which are also capable of producing jaundice of a like type.

There has recently been rather a tendency to narrowness of vision with regard to the causation of infective jaundice of microbic origin. Thus, because a most interesting form of jaundice has been recently proved to be due to an infection by *Spirochaeta icterohaemorrhagiae*, some writers have gone so far as to suggest that this organism is probably the cause of all forms of epidemic jaundice. This standpoint is obviously impossible.

PHYSIOLOGICAL CONSIDERATIONS.

An accurate knowledge of the physiology of the liver and its secretions is the basis of the pathology of jaundice, and further physiological research in this direction is bound to lead to a more accurate conception of the exact causation of the various forms of jaundice.

Bile.

The external secretion of the liver differs from the other digestive secretions in not possessing any marked ferment action on the organic foodstuffs. Only minute traces of a diastatic ferment are present in it. Bile assists in the digestion and absorption of fats, and increases, by reason of the presence of the salts of the bile acids, the rate of action of the pancreatic enzymes. The chemical composition of bile has been carefully studied, and detailed analyses of bile and fistula bile are given in the textbooks of physiology.

The salts of the bile acids are the most important constituents. In carnivora sodium taurocholate occurs and in herbivora sodium glycocholate is present. In man both these salts occur, but the glycocholate predominates in the proportion of 9 to 1.

The bile acids have been isolated in pure condition and their chemical composition accurately determined. Thus each is a compound of cholalic acid with an amino compound. *Glycocholic acid* results from the combination of glycine (amino-acetic acid) and cholalic acid, into which constituents it splits on hydrolysis. *Taurocholic acid* results from a similar combination of taurine (amino-ethyl-sulphonic acid) and cholalic acid.

The bile acids occur in bile as sodium salts, soluble in water and alcohol, but insoluble in ether.

The bile salts are secreted by the liver in the bile, but are reabsorbed in the intestine and carried back to the liver, so that a portal circulation of them occurs. This explains why fistula bile is so deficient in bile salts as compared with normal bile—for example, Copeman and

* Delivered before the Medical Society of London, April-May, 1919.

Winston found in fistula bile from a healthy woman the amount of bile salts to be 0.628 per cent., while Frerichs found normal human bile to contain 9.14 per cent.

The bile salts have most important functions. They markedly accelerate the action of pancreatic enzymes on the organic foodstuffs; they precipitate native proteins, and thus aid in their further hydrolyzation and absorption. In addition they act as solvents of the alkaline earth soaps—namely, those of calcium and magnesium in the intestines—and they are solvents also of cholesterin. No doubt the presence of bile salts in the bile is the chief factor from the chemical point of view in the prevention of the formation of gall stones.

Bile salts taken by the mouth cause an increased flow of bile, and Schafer[6] regards them as the only true cholagogues. Consideration of their physiological properties points to a more extensive use of bile salts therapeutically. Thus in the treatment of cholelithiasis, since gall stones are composed commonly of cholesterin and calcium bilirubinate, probably the most potent solvent would be a mixture of sodium glycocholate and sodium oleate. The former would dissolve the cholesterin, and the latter would tend to convert the calcium bilirubinate into soluble sodium bilirubinate and calcium oleate, the latter being soluble in the sodium glycocholate.

Bile salts cause a slowing of the pulse, and it is due to their presence in the blood stream in obstructive jaundice that this symptom occurs; they probably also account for some of the other symptoms of this condition.

Bile pigments are important constituents of the bile; by their presence in the blood stream they give rise to the characteristic colour of jaundice.

Bilirubin and its oxidized form biliverdin have the character of weak acids. Their alkali salts—for example, those of sodium, potassium, and lithium—are readily soluble in water, while the alkaline earth salts (those of calcium and magnesium) are insoluble. Free bilirubin is insoluble in water, alcohol, ether, benzene, and glacial acetic acid, but soluble in chloroform. Virchow showed that haematoidin crystals in old blood clots were closely allied to bilirubin, and Schafer[7] states that they are usually identical.

Hydrobilirubin (reduced bilirubin) has been shown to be identical with urobilin and stercobilin.

Haematoporphyrin, the iron-free derivative of haemoglobin, is isomeric with bilirubin, and on reduction yields hydrobilirubin. The bile pigments are undoubtedly derived from haemoglobin. Nenki and Sieber have shown[8] that in the liver haemoglobin splits up into haematin and protein, and that haematin loses iron and undergoes hydrolysis, yielding bilirubin. Animals having no haemoglobin in the blood have no bile pigments. Increased destruction of red blood corpuscles or the intravenous injection of haemoglobin, or of distilled water, which has the same effect, result in the formation of bile pigments in increased amount.

It is thus seen that the bile pigments are derived from haemoglobin and are formed almost entirely in the liver where the decomposition of haemoglobin occurs.

Bile pigments, if injected into a vein, are poisonous, they are not normally absorbed from the bile in the intestine, but are converted into stercobilin and evacuated with the faeces.

There is no doubt that further physiological chemical investigations with regard to bile pigments and bile salts, especially with a view to the quantitative estimation by simple clinical methods in the blood and urine, will throw a great deal of light on the pathology of the conditions causing jaundice.

Blankenhorn[9] has done some good pioneer work in this respect. He examined a large number of cases due to jaundice and conditions associated with it and found that bile pigments may be present in the blood without jaundice. He represents the cholaemia, which he determined by colorimetric methods, quantitatively in figures ranging from 15 to 375. When the degree of cholaemia reaches the figure 40 then jaundice will appear clinically. He finds that bile pigments may be present in the blood, and jaundice result without bile pigments being in the urine. In cases of obstructive jaundice, catarrhal jaundice, secondary anaemia, passive congestion of the liver, and pneumonia, he has shown the quantitative relation of bilirubin in the blood and urine, and he has made similar determinations for urobilin.

He states that the estimation of bile salts in the blood is attended at present with great difficulty.

Blankenhorn's work is undoubtedly most valuable, and its further development should enable important diagnostic tests to be made in diseases like relapsing fever, spirochaetosis icterohaemorrhagica, etc., where jaundice is usually a prominent symptom, though it may be absent. Also in the early stages of conditions, such as T.N.T. poisoning, which will ultimately develop jaundice, an early diagnosis might be made, and this would be of great value from the point of view of prevention and treatment.

Cholesterin may be present in bile in amount ranging from 0.5 to 5 per cent. It is excreted by the bowel, not being reabsorbed. As is well known, it is an important constituent of gall stones, and its solubility in bile salts has been alluded to as an important factor in the prevention of the formation of gall stones.

Lecithin is a lipoid compound of choline, oleic acid, glycerin, and phosphoric acid. It is a product, like cholesterin, of nervous metabolism, and is an important constituent of bile which is not reabsorbed by the bowel; like cholesterin, it is kept in solution by the bile salts.

Function of Liver in Relation to Fat Metabolism.

Major Alexander G. R. Foulerton[10] has, in a most interesting paper, brought out the relation of this function of the liver to certain forms of toxic jaundice. Normally available organic fat is stored up in the liver, and has a high iodine value, being composed of a large proportion of unsaturated fatty acids. Leathes has shown that in chloroform and phosphorus poisoning the liver becomes engorged with fat which has a low iodine value, being composed of a large proportion of saturated fatty acids.

Foulerton has shown that in poisoning by trinitrotoluene, dinitro benzene, phosphorus, chloroform, ether, and tetrachlorethane, impaired fat metabolism occurs as a consequence of impaired action of the liver cells due to toxic chemical influences.

Thus the liver in these conditions becomes engorged with fat of low iodine value. The engorgement of the liver with fat is a concomitant of the occurrence of jaundice in the early stages of many forms of toxic jaundice, and it is perhaps to some extent a contributory factor.

Glycogenic Function of the Liver.

This has been fully studied by physiologists. It is interesting to note that the occurrence of glycosuria has sometimes been observed in cases of jaundice. For example, Garrod[11] records a case of glycosuria in catarrhal jaundice. Glycosuria has been also observed in biliary colic, phosphorus poisoning, etc. I have on several occasions found glycosuria of a transient nature in jaundice cases.

Function of Liver in Protein Metabolism.

The most important function of the liver is the part it plays in breaking down the complex products of protein metabolism into simple nitrogenous compounds—for example, urea, uric acid, hippuric acid, etc.—which are excreted by the kidney. If this function of the liver fails, then intermediate products of protein metabolism occur in the blood, and speedily symptoms of the gravest kind, usually fatal, result—as, for example, in icterus gravis.

The symptoms of icterus gravis, or acute yellow atrophy of the liver, are undoubtedly due to an autointoxication, but what the exact chemical compounds of protein metabolism are which cause this condition we do not know. A great field of research is here open to physiological and pathological chemists.

Classification.

All cases of jaundice may be classed in the two great divisions: (1) Simple obstructive jaundice; (2) haemohepatogenous or toxaemic jaundice.

Simple Obstructive Jaundice.

This type results from obvious mechanical obstruction independent of changes in the blood or bile. Its causes are:

1. Obstruction by foreign bodies within the ducts—for example, biliary sand or calculi, mucus, worms, etc.
2. By inflammatory swelling of the duodenum or the mucous membrane of the duct, as in ordinary catarrhal jaundice.
3. By stricture or congenital deficiency of the duct.
4. Tumours closing the orifice of the duct or growing in its interior.

5. By pressure on the duct from without from various causes —for example, enlarged glands in the portal fissure, tumours of the liver, stomach, pancreas, kidney, omentum, faecal accumulation, abdominal aneurysm, etc.; movable kidney, pregnant uterus, also inflammatory processes adjacent to the bile ducts—for example, perihepatitis, cirrhosis of liver, periduodenitis, etc.

Symptoms of Simple Obstructive Jaundice.

In this condition a relatively undamaged and functioning liver exists with simple obstruction of the flow of bile, so that, apart from the symptoms due to absorption of the bile into the circulation, the condition of the patient remains good. It is remarkable how few toxic symptoms occur in cases where the most pronounced simple obstructive jaundice may have existed for weeks or months. In this condition the "cholaemia" reaches a high degree both as regards bile pigments and bile acids, and both exist in relatively high amount in the urine. The sweat contains bile, but the saliva, tears, and milk are rarely stained. The cerebro-spinal fluid and central nervous system remain unstained.

The icterus or tinting of the skin and conjunctivae ranges from a lemon yellow in the early stages to a deep yellow, olive green, or greenish-black colour in cases of long duration. Skin affections, such as pruritus, which may be of a distressing type, sweating, lichen, urticaria, and boils, may occur. Xanthoma and telangiectases may be observed in advanced cases. It is important to remember that skin affections due to the cholaemia of jaundice are almost invariably absent in haemo-hepatogenous jaundice.

The urine has a marked brownish-yellow colour, but may be tinted greenish or be blackish-green if the bilirubin present has undergone oxidation to biliverdin. The froth caused by the shaking of a urine containing bile is unusually permanent and is markedly stained; this is a good rough test.

Bile pigments are detected by Gmelin's test, or better by Trousseau's iodine test, in which a very dilute alcoholic solution of iodine is poured carefully into a test tube so that the iodine solution floats above the urine; a greenish zone gradually develops between the two layers. These tests should be made in good daylight.

Bile acids may be tested for by Hay's sulphur test, or the more delicate peptone test of Oliver.

In the urine albumin and bile-stained casts may be present in long-standing cases.

The stools are of a pale drab or slate-grey colour; they are usually very fetid and pasty. Daily inspections should be made, since, when the obstruction is complete, yellow colour is absent continuously, while with a partial or intermittent obstruction some altered bile pigments may give a yellowish appearance to some of the stools. With complete obstruction the percentage of fat in the stools is usually from three to six times the normal. Also the fluorescence test for stercobilin with zinc chloride and ammonia becomes only slightly marked or absent.

The pulse is markedly slowed in the early stages, due to bile acids in the blood. It may fall to 30 or 40. In the later stages the pulse increases in frequency, because the production of bile acids by the liver has diminished, and the kidney has gradually got rid of the excess in the blood. Further, the cause of the obstructive jaundice in a prolonged case probably has, *per se*, an accelerating effect on the pulse-rate.

Haemorrhages and a tendency to bleeding are characteristic of a chronic case. The blood coagulation time has been shown to be much prolonged.

Cerebral symptoms, irritability, depression, and even melancholia, may occur. A special terminal phase, sometimes known as "cholaemia" or "cholesteraemia" (which rapidly proves fatal), may terminate long-standing cases. This condition is probably identical with the symptom-complex of icterus gravis or acute yellow atrophy, and is due to an autointoxication caused by the impairment of function of the liver cells in dealing with the products of protein metabolism. The symptoms are not due to the action of bile or cholesterin in the blood, so that the terms "cholaemia" or "cholesteraemia," as applied to this condition, should be abolished.

Diagnosis.—In this type of jaundice a careful physical examination and the usual methods of clinical investigation will reveal usually the cause of the simple obstructive jaundice.

HAEMO-HEPATOGENOUS OR TOXAEMIC JAUNDICE.

This form of jaundice is caused by the circulation in the blood of toxic substances of chemical or microbic origin, as a result of which occur destruction of red blood corpuscles, an obstructive catarrh of the small intrahepatic bile ducts, an increased viscidity of the bile, and in severe cases a degeneration of the liver cells, resulting in autointoxication (icterus gravis).

The following varieties occur:

1. *Toxic.* Jaundice, sometimes known as "toxic jaundice," due to the action of chemical poisons, such as tetrachlorethane, trinitrotoluene, chloroform, phosphorus, toluylene-diamine, nitrobenzenes, nitrophenols, arsenobenzol derivatives, arseniuretted hydrogen, mushrooms, snake venom, etc.

2. *Microbic.* Jaundice due to the microbic toxins formed in various specific fevers and infections, such as relapsing fever, malaria, the enteric group of disease, typhus, pneumonia, influenza, syphilis, yellow fever, pyaemia, septicaemia, etc. In this group should be included infective jaundice due to *Spirochaeta icterohaemorrhagiae*, and probably epidemic catarrhal jaundice and Weil's disease.

3. *Blood Diseases.* Jaundice associated with splenic anaemia, pernicious anaemia, acholuric jaundice, haemoglobinuria, etc.

In haemo-hepatogenous jaundice the obstruction caused by inflammatory catarrh of the smaller intrahepatic ducts is not usually complete, so that many of the symptoms due to the direct action of bile in the circulation as described under simple obstructive jaundice are absent. Thus the skin complications and the slowing of the pulse are not present in toxaemic jaundice. In it the yellow coloration of the skin is usually much less pronounced, and in cases in which it becomes deep the complete intrahepatic obstruction is only temporary, and does not last long enough to cause symptoms of bile toxaemia. The stools may be pale for a day or two during the stage of temporary complete obstruction, but usually are well coloured with faecal pigment.

The urine in cases of marked jaundice will contain bile pigment, which in milder cases is often absent. Bile salts are generally absent, since their rate of production is diminished owing to defective liver function in consequence of the toxic agent causing the jaundice.

The blood contains bilirubin, and when this reaches a certain degree jaundice will occur. At about this stage bilirubinuria will be recognized; exceptionally it may appear before the jaundice, but usually occurs afterwards.

In haemo-hepatogenous jaundice the symptoms due to the jaundice *per se* are unimportant as compared with those due to the primary intoxication. Thus with chemical poisons the action of the substance on the body generally, and especially on the liver cells, in causing autointoxication is much more profound than the mere effect on the bile capillaries, causing jaundice.

In the case of microbic poisons the action of their toxins in causing the specific symptoms of the disease—for example, malaria, relapsing fever, enteric, influenza, etc.—is much more important than the symptoms resulting from the mere production of jaundice, the latter being quite overshadowed by the former. In toxaemic jaundice the blood shows a great liability to haemolysis, the red corpuscles are smaller and have increased fragility. In simple obstructive jaundice the red corpuscles are larger and show increased resistance to haemolysis (Chauffard).[12]

Severe constitutional symptoms are much more marked generally in toxaemic jaundice, and in this condition the grave and fatal symptoms of icterus gravis are much commoner and likely to occur very much earlier in the disease.

PATHOLOGY OF JAUNDICE.

In *simple obstructive jaundice* due to mechanical obstruction of the common or larger bile ducts the causation is clear. Bile cannot pass *per vias naturales*, and it thus becomes dammed back and is absorbed by the lymphatics, and, in severe cases, probably also by the blood capillaries of the liver. Adami[13] quotes the following experimental proof of the probability of direct passage of bile into the hepatic blood capillaries as well as lymphatics in obstructive jaundice. If in a dog the common bile duct be tied jaundice results quickly. If at the time of tying the bile duct the thoracic duct be also tied, jaundice will still

occur, but its onset is usually delayed. Bile is thus conveyed into the blood stream, jaundice resulting, and the blood and urine containing both bile pigments and bile acids.

In *haemo-hepatogenous or toxaemic jaundice* the causation is different. Toxic substances, whether of bacterial or chemical origin, circulate in the blood; they cause a certain amount of destruction of red blood cells, the products of which are conveyed to the liver, in company with the circulating poison. The poison or its products have a direct action on the liver cells, causing a degeneration. They also act on the bile capillaries, causing inflammatory catarrh, as a result of which the secretion of the bile capillaries becomes very viscid and the lumen of the fine ducts narrowed. In this manner an intrahepatic obstruction to the flow occurs in the fine bile ducts, and bile pigments find their way into the blood stream via the lymphatics, and probably also by the blood capillaries. The absorbed bile in toxaemic jaundice is usually rich in bile pigments, which arise from the increased destruction of haemoglobin; it is deficient in bile salts, owing to the impaired function of the liver cells.

When the bilirubinaemia reaches a certain degree jaundice occurs, and at a still higher percentage bilirubinuria. Bile salts are not usually passed in the urine, since their percentage in the blood is too low, but in some cases they occur in small amount.

The above expression of the pathology of toxaemic jaundice is the result of the work of Stadelmann[14] and his co-workers in 1881 on the action of toluylene-diamine, phosphorus, arseniuretted hydrogen, etc., in causing jaundice. Later Hunter, in 1885 and 1886, by a fine piece of research,[15] placed the causation of jaundice on a still more accurate basis, and his work and conclusions hold good to-day.

The injection of toluylene-diamine into a dog with a biliary fistula was, Stadelmann showed, followed by jaundice, thus proving that the obstruction occurred in the finer ducts. He found that the injection of toluylene-diamine into the blood stream of a dog caused a marked increased destruction of red blood corpuscles. From the second to the twelfth hour after the injection the bile secretion was increased and rich in pigments, then the secretion changed to a viscid colourless one, and from the fourteenth to the sixtieth or seventieth hour this condition remained. Jaundice was marked during the whole of this stage; afterwards the bile became normal and the jaundice cleared up. Bilirubinuria occurred soon after the onset of the jaundice—that is, about the fourteenth hour—but bile salts did not appear in the urine until the thirtieth hour, and they only remained for a few hours.

With *phosphorus* Stadelmann found a similar condition except that the stages were slower in production; thus the colourless viscid conditions of the bile commenced after twenty-four hours and lasted for five to eight days during which jaundice was present.

With *arseniuretted hydrogen* he found similar stages to occur, but noticed that the bile pigments were increased much more than with the two previous poisons, though the jaundice was much less marked.

In the above experiments neither haemoglobinaemia or bilirubinaemia occurred in the first stage following the administration of the poison, so that the red cell destruction and conversion of the haemoglobin into bile pigment did not occur in the blood stream but in the liver itself. The production of bile pigments was shown to be quite independent of the formation of bile acids, which latter are produced by the liver cells and have no relation to haemoglobin destruction.

Hunter confirmed Stadelmann's work, and, by careful *post-mortem* and pathological examinations of animals after the administration of toluylene-diamine, showed that a marked inflammatory catarrh occurred of the fine bile ducts. He also found degeneration of the liver cells and engorgement of them with fat; the intralobular bile capillaries were also filled with the remains of haemoglobin and broken down red blood cells.

The duodenum, after a few days' action of the drug, showed a markedly swollen and reddened condition of its mucous membrane with small haemorrhages in places. This inflammatory condition extended for a distance of 12 in. or more below the opening of the bile duct and was obviously due to a catarrh set up by irritating products in the bile. Hunter pointed out that only minute traces of toluylene-diamine were present in the bile, and that the drug, if given by the mouth, did not cause this marked duodenitis. He therefore attributed it to irritant bodies in the bile set up by the action of the toluylene-diamine on the liver.

Hunter pointed out that the catarrh set up in the intrahepatic bile ducts by toluylene-diamine began high up and descended to the duodenum. He considers it likely that in ordinary catarrhal jaundice the catarrh may be of a similar descending nature. The French school have long held this view, but Murchison taught that the catarrh started in the duodenum and spread up the common bile duct, blocking it or its larger branches.[16]

The above experiments showed that the production of jaundice is not directly proportional to the amount of red blood cell destruction. Thus in dogs arseniuretted hydrogen causes great blood destruction and slight jaundice, while toluylene-diamine causes slight blood destruction and deep jaundice.

The same conclusion was arrived at by experiments with toluylene-diamine on the cat, rabbit, and dog. In all the drug caused red cell destruction. In dogs marked jaundice occurred, but no haemoglobinuria. In cats no jaundice resulted, but haemoglobinuria followed. In rabbits neither jaundice nor haemoglobinuria occurred.

Recent histological studies of the liver in long-standing cases of toxic jaundice from tetrachlorethane, trinitrotoluene, etc., by Spilsbury and others, have shown that considerable destruction of the liver cells occurs, and when this destruction is compatible with life the normal liver tissue becomes replaced by tissue of an inflammatory nature, resulting from the absorption of the necrosed liver cells. In this abnormal tissue leakage of bile from the small capillaries into lymphatics and blood vessels no doubt occurs, and is a factor in causing jaundice.

Summary.

The toxic substances causing haemo-hepatogenous jaundice have three important actions:

(1) Degeneration of the liver cells with impairment of hepatic function;
(2) Destruction of red blood cells;
(3) The production of an obstructive catarrh of the fine intrahepatic bile ducts.

Each toxic substance differs in the relative degree of its respective action in these three respects.

Thus, if (1) predominates, only slight jaundice may occur, but the symptoms will be those of autointoxication (icterus gravis) and of the gravest character. Examples of this type of poison are arseno-benzol derivatives, chloroform, mushroom poisoning, arseniuretted hydrogen. If (2) predominates, anaemia will be marked and jaundice may be slight only (for example, metadinitrobenzene). If (3) predominates, jaundice will be very marked (for example, in tetrachlorethane, trinitrotoluene, and toluylene-diamine).

Bacterial poisons likewise possess these three actions in varying degree—for example, (1) predominates in yellow fever, (2) in malaria, and (3) in relapsing fever, epidemic catarrhal jaundice, spirochaetosis icterohaemorrhagica.

Importance of Experiments on Dogs.

Our knowledge of the pathology of toxaemic jaundice has been of the utmost practical value to the nation during the present war. It rendered possible the early recognition and detection of the cause of the toxic jaundice which was so common amongst aeroplane and munition workers, and it directed the preventive methods which were so successful.

Let us not forget that this knowledge has been gained almost entirely as the result of carefully conducted experiments on dogs, and that in this research other animals, as shown above, were found unsuitable.

It will be nothing short of a national calamity if this source of research is to be denied the medical profession in the future. The recent letters to *The Times* of Professor Schafer and Dr. Leonard Hill express the vital importance of carefully conducted experiments on dogs in scientific research, the knowledge gained by which will be of inestimable practical benefit to the nation. It is sincerely to be hoped that the ill-conceived bill now before Parliament for preventing experiments on dogs will be thrown out.

DIAGNOSIS OF JAUNDICE.

It is important that the examination should be made in daylight, since jaundice is invisible in ordinary artificial yellow light. Special attention should be paid to the examination of the conjunctivae, skin, palate, stools, and urine, as described above.

Care must be taken to exclude the lemon-yellow tint associated with the cachexia of malignant disease or pernicious anaemia. An examination of the conjunctivae

over the sclerotics usually differentiates these. The bronzing of sunburn and the pigmentation of Addison's disease and other conditions are likewise distinguished.

In coloured races sometimes difficulty occurs; thus in some Indians a definite yellow pigmentation of the conjunctivae occurs, giving a characteristic appearance of jaundice. In Mesopotamia I had a Madrassee servant who had markedly yellow sclerotics resembling deep jaundice; this condition was entirely due to pigmentation.

In doubtful cases an examination of the blood serum for bilirubin is of great importance. This test has been used by Dr. Castellain and others in the detection of toxic action of trinitrotoluene on the liver in munition workers before the yellow coloration of the skin has actually developed.

In a case of jaundice careful search should be made by the usual clinical methods for the primary cause of the condition.

TREATMENT OF JAUNDICE.

The important course is the treatment and removal of the primary cause of the condition.

Speaking generally, the diet should be free from fats, since, as pointed out above, there is a tendency for fat engorgement of the liver cells.

Protein constituents of the diet should be reduced, since there is a tendency, especially in toxaemic cases, to acid intoxication. Alcohol is best avoided. Saline aperients should be given, but powerful purgatives are best avoided. Calomel in small repeated doses is not advisable, since there is a risk of symptoms of mercurial stomatitis developing.[17] Alkalies—for example, sodium bicarbonate—should be given by the mouth in large doses, and in toxaemic cases[18] strong solutions of sodium bicarbonate may be given by the rectum as frequently as it can be retained.

Any special symptoms will require appropriate treatment as they arise.

FALSE JAUNDICE.

Attempts may be made to feign jaundice by coloration of the skin with saffron or turmeric or other yellow dye (Wickham Legg[4]). Trinitrotoluene produces a yellow staining of the skin, so that munition workers handling this substance are often named "canaries" by their comrades. Since in this condition the conjunctivae are unaffected and the urine and stools are normal, little difficulty in detection is experienced.

During the war picric acid has not uncommonly been taken by malingerers for the purpose of simulating jaundice, and some care is required lest the physician may be deceived.

Cases have been published as occurring in the French and Italian armies. Fontaine studied this condition and published[19] an investigation of several cases. He laid stress on the absence of colourless stools, the less marked staining of the tissues, and the absence of pyrexia and premonitory symptoms before the occurrence of jaundice. He pointed out that the conclusive test was absence of bile pigments in the urine and the presence of the picric acid derivative—picramic acid.

Professor Masuata, in May, 1917, described[20] two interesting cases in Italian soldiers of jaundice artificially produced by picric acid. In these cases 1 gram of the drug had been taken every twenty-four hours. The symptoms were nausea, anorexia, coated tongue, and severe epigastric pain. In one case there was a scarlatiniform eruption and pyrexia. The skin and conjunctivae were definitely yellow, and resembled mild catarrhal jaundice. The stools were stained yellow, and the urines gave definite reactions for picramic acid and bile pigments were absent.

The presence of a rash and pyrexia in one of these cases shows the difficulty of diagnosis on clinical observations alone. The only sure test is the presence of picramic acid in the urine.

In large doses picric acid might cause true haemo-hepatogenous (toxaemic) jaundice, when both bile pigments and picramic acid would appear in the urine.

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CONDUCTIVE ANAESTHESIA BY THE INTRA-SACRAL EXTRADURAL INJECTION OF NOVOCAIN.*

BY

SAMUEL R. MEAKER, B.A., M.D., CAPTAIN R.A.M.C.

THE method about to be described is not, so far as I have been able to discover, in use anywhere in this country. It is exceedingly practical as well as simple and safe, and, in the opinion of those who have developed it, requires only to be better known in order to be widely and usefully employed.

Anatomy.

The dural sheath ends normally at the top of the second sacral segment. From this point downward the sacral and coccygeal nerves run free in the bony canal of the sacrum, surrounded by a little loose areolar tissue, until they make their exits at their respective foramina.

Of the posterior trunks, the first and second sacral supply the integument of the inner aspect of the leg and thigh respectively. The lower sacral and coccygeal branches are distributed to the anus, buttocks, perineum, and part of the skin of the male genitalia. The individual distribution of these lower nerves is not accurately known.

The spinous process of the fifth sacral segment does not exist as a median protuberance, but as two unfused halves (the so-called cornua of the sacrum). The sacral cornua and the tip of the sacrum form an isosceles triangle, of which the apex is directed upwards—the hiatus sacralis, which is the lower termination of the bony spinal canal. This gap is filled in by a dense fibrous membrane.

Since the sacrum is a rudimentary bone many variations from the normal are met in connexion with the hiatus, of which the most important are the following: (1) It frequently replaces the spinous process of the fourth sacral segment as well as that of the fifth, and may run up as high as the second. (2) It is often found slightly to one side of the median line as marked by the anal cleft. (3) One cornu is frequently much more prominent than the other, as if the sacrum were slightly rotated on its long axis. (4) The hiatus is sometimes very narrow laterally, and (5) sometimes very shallow antero-posteriorly—that is, between the occluding membrane and the anterior aspect of the bony canal. In these last two conditions the technique of injection may present some difficulty.

Scope of the Method.

When novocain is injected extradurally into the bony canal of the sacrum, anaesthesia of the third and lower sacral and coccygeal nerves is produced. The motor roots are not affected, and retention of urine after haemorrhoid operations done with sacral injection is neither more nor less common than when a general anaesthetic is given. The regions supplied by the first and second posterior sacral nerves may undergo a paraesthesia, but are not anaesthetized. This may be because the upper nerves run free for a comparatively short distance in the sacral canal, or because they are large trunks and do not readily absorb surrounding fluid.

The proven field of usefulness for sacral anaesthesia comprises operations for haemorrhoids, fistulae, and other conditions in and about the anus. The great majority of my cases have been of this sort, and in such one may employ the method with a practical certainty of

* An address given before the Aldershot Command Medico-Chirurgical Society.

success provided the technique of injecting the sacral canal has been mastered. The extent to which the buttocks are involved varies considerably. In some cases the anaesthesia is limited to a circle around the anus three or four inches in radius, while in others almost the whole of the buttocks may be analgesic. There is usually bilateral symmetry of effect. The lower rectum is anaesthetized for at least three inches above the anus.

I have incised several perineal abscesses under the sacral injection of novocain, and have four times operated for urethral stricture—twice by internal urethrotomy and twice by the combined internal and perineal method. In all these cases the anaesthesia was perfect. On the other hand, in several cases where strictures were forcibly dilated with bougies, slight pain was felt. The conclusion from a rather limited experience would seem to be that while sacral anaesthesia is perfect for cutting operations in the urethra, it serves only to diminish the pain of dilating and stretching. Even so, it may have a field of usefulness in cystoscopy and instrumentation.

Cases have been noted where the skin of the scrotum and penis was fully anaesthetized. This is exceptional, and cannot be depended upon.

The war has prevented investigations as to the value of the sacral injection in operations for the repair of the female perineum as well as in combating the perineal pain of parturition. On theoretical grounds it should serve both these purposes. It remains also to be seen whether the method is suitable for perineal operations involving the prostate and bladder. Possibly at the bladder neck a higher sensory nerve supply would be encountered.

Preliminary Hypodermic Narcotization.

Even though an operation under local or regional anaesthesia may be entirely painless, the ordinary patient will be likely to undergo an amount of anxiety and worry equivalent to genuine mental suffering during its performance. This may be obviated by judiciously graded preliminary doses of scopolamine and morphine. The dosage should vary according to (1) the magnitude of the proposed operation, (2) the age, weight, and general physical vigour of the patient, and (3) the patient's mental attitude. To precede a haemorrhoid operation on an average male patient, the following dosage would be suitable:

Two hours before operation—	
Morphine	gr. $\frac{1}{4}$
Scopolamine	gr. $\frac{1}{150}$
One hour before operation—	
Morphine	gr. $\frac{1}{3}$
Scopolamine	gr. $\frac{1}{200}$

The handling of these drugs cannot be carried out by rule of thumb, but must be adapted to each case. The size of the second dose can often be most nicely regulated after carefully observing the effect of the first. Sometimes a third small injection of scopolamine (gr. $\frac{1}{1000}$) is useful just as the operation is about to begin, but this will rarely be necessary in minor cases. It is desirable to have screens around the bed from the time of the first injection, and to forbid all noise and unnecessary talking in the theatre while the operation is in progress. This hypodermic medication is aimed not at all at the relief of pain, but solely at making the patient inclined rather to lie quietly and doze than to take an active interest in what is going on around him. The combination of scopolamine-morphine narcosis with skilful novocain anaesthesia is ideal for both patient and operator.

Technique of Intrasacral Injection.

The injection may be made equally well in bed or on the operating table. The former method has the advantage of allowing the patient to rest comfortably for the fifteen minutes that must elapse before anaesthesia is complete. He may be in either of two positions: sitting, with the buttocks projecting well over the edge of the table or stool; or lying on the left side with the legs drawn up, the right one slightly more so than the left. As regards facility of injection, there is little choice between the two positions. From the patient's point of view the second is preferable, particularly if preliminary scopolamine-morphine has been given.

The first step, and a most essential one, is to determine the position of the sacral hiatus. Usually this presents no difficulty, but in patients well padded with fat in that region it may be almost impossible to recognize the bony landmarks. The routine is as follows: Feel the tip of the sacrum, which usually lies just at the top of the anal cleft and is the lowest prominent bony point of the spine. Then, to make sure that what has been felt is the lower end of the sacrum and not a displaced coccyx, feel the tip of the coccyx in the anal cleft. Next, press the ball of the right index finger, pointing toward the patient's head, firmly against the back of the sacrum at its tip in the median line, and, without sliding the finger along the skin, work slowly up along the dorsal aspect of the bone. The finger will be felt to come into the apex of the inverted V which is formed by the sacral cornua. The common variations from the normal in position and size of the hiatus have already been noted.

The injection is to be made through the approximate centre of the hiatus. The exact site of this point must now be marked out, for, after a superficial injection, the bony landmarks will no longer be palpable. Bearings may be taken relative to the anal cleft and to some such skin mark as a pigmented mole. A more accurate method is to dip a needle in tincture of iodine and to mark out on the lower back and right buttock lines of "latitude" and "longitude," converging at a right angle upon the proper point. Care must be taken not to fall into error through the sliding of skin over bone under pressure of the finger.

An area the size of a florin over the hiatus is now painted with iodine, and a drop of novocain is injected into the skin with a fine sharp needle. Before this is done the patient should be warned that he is about to feel a sharp "pin-prick." Another drop is put into the membrane which occludes the hiatus. This membrane is well supplied with sensory nerves, and, unless these preliminary injections are carefully done, the insertion of a large needle will give considerable discomfort.

The intrasacral injection is best made with an ordinary lumbar puncture needle of medium calibre. For insertion into the bony canal this should be equipped with a stylet and detached from its syringe. It is held perpendicular to the plane of the back, passed through the skin over the central point of the hiatus, and pushed on until it encounters the resistance of the fibrous membrane. The outer end of the needle is now carried towards the patient's feet through an arc of 90 degrees in the mid-line of the back, so that the needle lies in the plane of the back, pointing towards the patient's head in the mid-line. During this last manœuvre care must be exercised lest the point of the needle be displaced from the centre of the hiatus. The needle is now to be pushed as it lies straight up the back. The piercing of the membrane may require some little force, and as this occurs a characteristic "crunch" can be felt and often heard. The needle should be pushed on for about two inches, when its further advance will be blocked by the antero-posterior curve of the sacral canal.

The correctly placed needle will lie in the plane of the back and in the line of the sacral spines. Its point will be movable with fair freedom within a limited range from side to side, but not at all from back to front; it will, of course, not be palpable under the skin.

There are three common errors in the placing of the needle: (1) The needle may lie in the plane of the back and in the line of the sacral spines, being at the same time entirely superficial to the sacrum. In this case the needle point will usually be visible and palpable when it is moved, and there will be superficial oedema when the solution is injected. (2) The needle may enter the mass of muscle at one side or the other of the sacral spines. In this event it will have an obvious inclination toward the anterior aspect of the patient instead of lying in the plane of the back; it will also deviate somewhat laterally from the line of the spines. (3) In many cases where the needle has entered the sacrum correctly its point catches under the periosteum lining the canal. When this happens, the lateral mobility of the needle is lost, and very great force is required to make the injection.

If at the first attempt one fails to place the needle correctly the best plan is to withdraw it entirely, and to try again after carefully noting the markings of the hiatus. Provided the preliminary injections have been efficiently done, one may "feel" for the membrane with the point of the large needle, but this will be a hopeless task unless the original "geometry" has been accurate. If the third of the above errors be encountered, the needle should be withdrawn about half an inch and rotated on its own axis through 180 degrees.

The stylet is now removed from the needle. No cerebro-spinal fluid should, of course, appear. It is impossible to tap the spinal theca by this route unless one of three conditions exists:

1. An abnormally low dural sheath.
2. An abnormally capacious sacral canal antero-posteriorly.
3. A curved needle.

Nevertheless, in one case indirectly known to the writer this accident occurred. The full dose of novocain was injected, fortunately with no worse result than an anaesthesia of the lower half of the body lasting forty-eight hours.

The injection now used is 20 c.cm. of a 2 per cent. solution of novocain in sterile water to which have been added five drops of 1 in 1,000 adrenalin. Formerly the same quantity was employed of a solution containing novocain 2 per cent., sodium chlorate $\frac{1}{2}$ per cent., sodium bicarbonate $\frac{1}{2}$ per cent.

According to a French writer, the sodium salts favour the absorption and retention by nerve trunks of a surrounding

fluid. Clinically the results have been the same, whether or not these salts were present in solution. It will be noted that the amount of novocain exceeds 6 grains. I have repeatedly used as much as 15 grains in a local or regional anaesthesia, and have seen 35 grains injected without the slightest evidence of toxicity. Such trouble arises much oftener from old and decomposed adrenalin than from novocain.

There is great individual variation, not only in the capacity of sacral canals, but also in the tightness with which the orifices are plugged by soft parts. Hence the resistance encountered in making the injection is variable. In many cases the solution goes in quite as readily as though the syringe were being emptied into the air. A fair degree of ease is the rule. Not uncommonly, however, considerable force is necessary. When such is the case, one should always suspect that the point of the needle may be engaged under periosteum instead of lying free in the sacral canal. Superficial oedema over the sacrum should be carefully watched for during injection; its appearance is conclusive proof that the needle is not within the canal. When the injection is correctly made, patients often note a transient dull ache down the inside of the thighs and legs—a result of pressure on the first two posterior sacral roots. This symptom is presumptive evidence of success in placing the needle. As soon as the full amount is injected the needle is withdrawn with a quick movement. As a rule, no dressing is necessary over the puncture.

Injections of the sacral canal in the cadaver with methylene blue show that the solution travels up extradurally to a variable extent into the lumbar region. This of course does no harm, except that some fluid is lost from the sacrum. To combat this by the aid of gravity it is advisable to place an extra pillow under the shoulders of the patient as he rolls over on to his back.

It is necessary to wait fifteen minutes for the development of the anaesthesia. This rarely takes longer; often it is complete in ten or twelve minutes. During this interval the patient should lie quietly, and should not be disturbed by talking or the rattling of instruments. His pulse and colour should be watched. If preliminary morphine and scopolamine have been given, he will probably doze. Scopolamine produces a very dry mouth, and water may be given if desired.

Preliminary tests of anaesthesia are likely to be misleading. The pressure sense is often retained where the pain sense is lost, and if the buttock is poked with a needle the patient is sure to state that he feels it. One often hears men inexperienced in local anaesthesia repeatedly asking such questions as "Does it hurt?" or "Do you feel that?" before and during an operation. If it does hurt, the patient will certainly not conceal the fact. Such interrogations are the worst possible psychotherapeutics. A fairly satisfactory test is to pick up the skin near the anus with a sharp-pointed towel-clip, or to put a pair of forceps on a projecting haemorrhoid. But the real test of an anaesthetic method is, after all, in the operation.

All operating under local or conductive anaesthesia requires special gentleness of manipulation. Rough pulling and tearing of tissue are likely to disturb the patient, even though they may not cause pain. Sharp dissection is generally preferable to blunt. Under intrasacral novocain the sphincter is, as a rule, slightly relaxed. Unless it is dilated very slowly and easily, pain referred to the epigastrium may be felt. The ordinary crushing, cutting, or burning of piles can be carried out in the usual way.

No accurate data are at hand as to the duration of the anaesthesia produced by this method. It has always lasted long enough for the operation in hand. In one case, at least, it was still perfectly efficient two hours after injection.

A purely local infiltration anaesthesia may be attended with varying degrees of success. A conductive anaesthesia, on the other hand, is usually either a perfect success or a flat failure. In a series of more than eighty intrasacral cases the writer has failed six times. Three of these were among the first ten cases, and were undoubtedly due to inexperience and faulty technique in the placing of the needle. In the last three failures it seemed almost certain that the injection had been correctly made; in two no anaesthesia was obtained, in the other a unilateral effect only. It is difficult to explain these cases except on the ground of an abnormal arrangement of sacral nerves and dural sheath, preventing access of the solution to the nerve trunks. It has been suggested that a factor in the unsuccessful cases might be a low fluid pressure in the sacral canal. This does not seem likely, for perfect anaesthesia is often produced when the solution has gone in with no appreciable resistance. Furthermore, if the volume of the solution is doubled without increasing the amount of novocain, less satisfactory results are obtained.

THE TREATMENT OF GONORRHOEA WITH ACRIFLAVINE.

By DAVID WATSON, M.B., C.M.,
LECTURER ON VENEREAL DISEASES, GLASGOW UNIVERSITY.

THE account given of flavine by Browning and his associates, in the BRITISH MEDICAL JOURNAL of January 20th, 1917, showed that flavine possessed in a high degree the properties required of a genito-urinary antiseptic, and it was used as soon as a supply was forthcoming (June, 1917). The results obtained in gonorrhoea cases were very satisfactory, and it now occupies the chief place in the scheme of treatment adopted in the venereal clinics under my control.

The solution recommended for general surgical use (1 in 1,000 in normal saline) was found to be too strong for free application to the urethra. The strength which may be employed for the urethra varies inversely with the quantity of solution used. Thus, when using small quantities by the syringe method of treatment, a concentration of 1 in 1,000 in normal saline may be prescribed, but in lavation ("grand lavage" of Janet) 1 in 4,000 in normal saline was found to be the optimum, one pint being used twice daily.

Stock solutions of 1 in 500 acriflavine and of 1 in 6 sodium chloride are kept, and 20 oz. of the dilute solution is prepared for each patient by mixing 2½ oz. of the acriflavine solution, 1 oz. sodium chloride solution, and 16½ oz. warm water (106° F.). The stock solutions are filtered if not perfectly clear.

For anterior urethritis, treatment by syringe injections is simple for the patient to carry out in private practice as compared with lavation by means of a douche can, but it cannot be recommended as a routine procedure. The posterior urethra is infected for some time, probably one to three days, before definite symptoms of its involvement are manifest, and it is important that treatment of the posterior urethra should not be withheld during this period.

Brilliant results can be got by 1 in 1,000 acriflavine injections in a proportion of cases, but this method neither prevents the occurrence of posterior urethritis nor aborts it if existing, and is followed by a larger percentage of complications. During a properly conducted treatment by urethro-vesical lavation, posterior urethritis with its risk of complications does not arise; the onset of prostatitis or epididymitis after lavation has been begun means either that gonococci had previously reached the prostatic or seminal ducts, or some failure in the method of lavage.

The following analysis of the cases of gonorrhoea treated in a general hospital during a period when acriflavine was largely employed (January to September, 1918) proves, I think, the value of acriflavine lavation.

A total of 423 cases of gonococcal infections were admitted, and the average detention in hospital was 28.8 days. Of these, 307 were cases of acute gonorrhoea; I have classed 116 provisionally as chronic, the disease having been present for one month or more. The acute cases had an average stay in hospital of 26.8 days; in 222 of them acriflavine was the only antiseptic employed; these cases averaged 21 days in hospital. Of this group of cases, 26 suffered from complications on admission—namely, epididymitis 19, rheumatism 2, cowperitis 2, stricture 2, prostatitis 1. If these are deducted there remains 196 cases of uncomplicated acute gonorrhoea treated by acriflavine lavation. These cases show an average of 19.8 days in hospital, the actual treatment being completed in 15.4 days, and the patients being retained for other 4.4 days for observation before being dismissed as cured. Of the acriflavine treated cases, 6 per cent. relapsed; these cases had been, on an average, only

11 days in hospital, and less than 7 days under treatment we now know to be insufficient.

The complications arising in cases under acriflavine treatment were as follows:

1. *Epididymitis* (2 cases). In both the epididymitis developed while the patients were undergoing dilatation treatment with bougies for glandular involvement, and in both cases the customary insertion of atropine suppositories had been neglected. Infective material expressed from the diseased glands would be carried into the posterior urethra by the bougie, the passage of which would, in the absence of atropinization, excite reversed peristalsis. After the withdrawal of the bougie the patient filled the bladder as usual with acriflavine solution, but gonococci had meantime been carried along the common seminal duct beyond the reach of the antiseptic, and in due course an epididymitis resulted.
2. *Subacute Prostatitis* (2 cases). Both had an acute posterior urethritis and probably some prostatitis when admitted.
3. *Cystic Abscess* (3 cases).

Clinical Course.

When a case of acute gonorrhoea with profuse purulent urethral discharge is put on acriflavine lavation the inflammatory symptoms quickly subside. Within twenty-four hours the discharge has decreased to one-third, and by the third day it has usually disappeared, leaving perhaps a trace of moisture expressible in the morning. After three or four days' treatment gonococci are absent from smears taken from the urethra, nevertheless if the lavage is discontinued at this time discharge and gonococci will return within a few days in many cases. The treatment should therefore be maintained for ten to twelve days, when, with the smear negative, no discharge expressible in the morning, and the morning urine showing neither pus nor filaments, all treatment may be suspended. The patient receives a change of underclothing and remains under observation for four days longer, when he may be discharged to duty should no symptoms of relapse have developed.

Cases which have not cleared up on the tenth day fall into one of the following groups:

I. When the discharge is scanty but diffuse pus is present in both urine glasses, there is probably some degree of cystitis present with a secondary infection by some other organism. In such case a urinary antiseptic—for example, hexamine—is indicated; and, in addition, a small quantity of the acriflavine solution may be left in the bladder overnight. Should these measures not be quickly effective, oxycyanide of mercury solution (1 in 5,000) may be substituted for the acriflavine.

II. In the presence of a continued urethral discharge there is probably a cystic abscess in the anterior urethra or an infected para-urethral passage or other duct where the gonococci are beyond the reach of the acriflavine, and special treatment is therefore required.

III. If filaments are present in the urine glandular involvement is suggested. The prostate should be examined per rectum, and the urethra should be explored with an acorn-tipped bougie and examined through the urethroscope, and treatment appropriate to the condition found should be instituted.

Before any instrumentation involving the posterior urethra, and also before any thorough rectal examination is attempted, atropine suppositories ($\frac{1}{100}$ grain) should be used to obviate the risk of vesiculitis or epididymitis being excited.

Mode of Action of the Acriflavine.

Acriflavine acts both on the medium and on the invading organism.

1. That the acriflavine penetrates the tissues is indicated by the staining of the mucous membrane which is apparent after its use. The mordant action of sodium chloride may have some effect in delaying the disappearance of the dye. There is evidence in the urine of the presence of acriflavine for several hours after lavation, and the mucosa therefore is kept in a condition which renders it unsuitable as a medium for the growth of gonococci. This effect of the acriflavine can be demonstrated in the laboratory by washing a sloped tube of gonococcus medium with acriflavine solution; gonococci will not grow on medium so treated.
2. Acriflavine is a gonococcicide. Colonies exposed to the action of a 1 in 4,000 solution are killed in two minutes.

There are no contraindications to the use of acriflavine, and the only drawback to its use is the staining by this powerful dye of clothing and hands. This can be reduced to negligible proportions with sufficient care; a perforated rubber apron and rubber gloves may be used. Stains may be removed from fabric by means of eusol, and from the skin by 1 per cent. hydrochloric acid in methylated spirit.

Acriflavine, in my experience, has proved a distinct advance on any antiseptic previously used for the treatment of gonorrhoea. In attempting to improve on the results achieved by lavation with potassium permanganate I have tried many other antiseptics—for example, brilliant green, auramine and other dyes, eusol, chloramine-T, etc.—and, instead of lavation, I have experimented with instillations and injections of acriflavine, brilliant green, etc., in various oils, but so far I have found nothing to alter the conclusion reached over a year ago, that lavation with 1 in 4,000 acriflavine is the most satisfactory routine treatment for acute gonorrhoea at present available.

THE VALUE OF "BIPP" IN PRIMARY OPERATIONS FOR GUNSHOT WOUNDS OF JOINTS.

BY CAPTAIN F. HOLT DIGGLE, O.B.E., F.R.C.S., R.A.M.C.,
SURGICAL SPECIALIST—C.C.H., E.E.F.

THIS war has been responsible for bringing before the notice of the profession many antiseptics, of which some are new and others have been revived. Bipp (bismuth, iodoform, and paraffin) is one of the latter, but, as with many other things, its results are disappointing unless one carries out to the letter every detail in the preparation of the material and surgical technique as laid down by Rutherford Morison.[1]

If strict attention to detail is observed, it is my opinion that surgeons will find in bipp a valuable asset, particularly so in the case of joint wounds. Its value here is obvious if one can obtain primary union of skin and bone as well as good functional result; for not only has the limb been saved, but the actual time taken in recovery is far less than by any other method of treatment, and I venture to say that the ultimate functional result will be much better.

The two cases I am about to record were each wounded by shell fragments, and naturally the wounds were in a very lacerated and dirty condition, being covered with sand.

CASE I.

Sgt. A. was admitted to the casualty clearing hospital on May 17th, 1918. There was an extensive shell wound of the left elbow, a semilunar flap of skin including the olecranon process of the ulna had been reflected upwards, and there had been free bleeding from the interosseous recurrent artery. The joint was completely exposed from behind and the synovial membrane and skin edges severely bruised.

Operation.

The skin was cleansed with ether, methylated spirits, and carbolic lotion (1 in 20), but the wound itself, including the exposed joint, was cleansed with methylated spirits and flushed with saline. No carbolic solution was used for fear of irritating the joint. Extreme care was taken to get as much sand as possible out of the wound by lightly rubbing with a swab whilst the saline was flowing. When the wound was thoroughly cleansed the skin edges were excised, lacerated muscle and ligamentous tissues removed, and the edges of the lacerated synovial membrane trimmed. All the bleeding points were secured. The wound was again flushed with saline, a swab steeped in methylated spirits was applied, and fresh towels arranged. Bipp was then lightly rubbed into every crevice of the wound and the olecranon was secured in position by passing iodized catgut smeared with bipp through the periosteum of its posterior surface and the periosteum of the shaft of the ulna. The synovial membrane was likewise sutured with fine catgut and the wound closed with a continuous stitch of thread smeared with bipp. A spirit gauze dressing was applied and the limb secured to an anterior straight splint.

I kept the patient under observation for seven days, during which time the temperature twice rose to 100.6°, but the pulse never rose above 80. On the fourth day I had to change the dressings because there had been a copious serous exudation. The wound then had a sodden appearance, but was otherwise healthy. I squeezed out a quantity of serum and reapplied a spirit dressing. On the fifth day the temperature subsided and remained normal until the patient was evacuated on the seventh day. Five weeks later I learnt from the base that there had been primary union of the wound, that the functional result was already very good and would be still better.

CASE II.

Pte. D. was admitted on June 11th, 1918. There was a compound comminuted triradiate fracture of the right patella exposing the knee-joint. The synovial membrane was much injected and the whole wound covered with sand. The same method of cleansing the skin and wound was adopted as in the former case.

Operation.

A tourniquet was applied. The wound was extended on the outer side by making a semilunar incision upwards so as to expose the joint more fully and facilitate the better apposition of the upper fragment of the patella. The bruised skin edges were excised, the joint thoroughly cleansed as before. The fractured surfaces of the patella were thoroughly scraped with a Volkmann's spoon so as to get rid of the sand, but nevertheless it was deemed advisable to remove a small portion on the outer side about ½ in. in diameter. After thorough cleansing with saline the whole wound was gently rubbed with bipp and about ʒiij of bipp, previously "let down" with sterile liquid paraffin until it had a more oily consistency, was run into the joint. The bony fragments were approximated as in the other case and the skin was closed with interrupted sutures. A spirit gauze dressing was applied and the dressings firmly bandaged on before the tourniquet was removed, a back splint with footpiece was then applied.

The patient stayed for seven days, during which time the wound was never dressed. The temperature rose to 101° and 101.2° on the third and fourth day respectively, but the pulse was never over 85. The patient had no pain, and the temperature subsided before evacuation.

I am indebted to Captain Bannister, F.R.C.S., R.A.M.C., for the following notes, dated July 11th, 1918:

"When admitted to the base hospital the temperature was 101° and the pulse 96. The dressings were removed, and there was some slight surface inflammation of the lower end of the wound over the patella. The wound was dressed twice daily with eusol. The temperature reached normal the fourth day after admission, and the stitches were removed on the fourteenth day after the operation. The wound is now completely healed, except for a small area of granulations with some exposed fibrous tissue covering patella at the lower part of the wound. There is certainly fibrous union of the patella, and I think it will eventually become osseous. He can now move the knee about 30 degrees, but I have not allowed him much movement yet."

REMARKS.

I think there are several points of importance to be gathered from the above cases:

1. The thorough cleansing of the wound—this entails a considerable amount of time.

2. Discrimination in the quantity of "bipp" used: I have noticed that if it is used too liberally there is an extensive exudation which gives the wound a sodden appearance and necessitates the changing of the dressings, which is not desirable in fracture cases.

3. The importance of rest to the joint by splinting. This I regard as a most essential factor, whether there is any fracture or not.

4. The pulse, in conjunction with the temperature, is a better guide as to the necessity for changing the dressings and having a look at the wound than is the temperature alone. "Bipp" cases frequently run a high temperature, but if the pulse-rate remains slow there is no need for anxiety.

My thanks are due to Lieut.-Colonel H. A. Bransbury, D.S.O., R.A.M.C., for permission to publish the notes of these cases.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, October 20th, 1917, p. 503.

ON April 12th the "Mary Kingsley" medal of the Liverpool School of Tropical Medicine was presented to Dr. J. W. Scott Macfie, a former student of the school, in recognition of his distinguished researches in tropical medicine and allied subjects.

THE Société de Biologie has appointed a committee, with Professor Charles Richet as chairman, to study the physiological and hygienic problems of industrial life, including such matters as the physical and psychical qualities required for any particular occupation; work for persons with a physiological defect; the re-education of crippled and injured; the effect of diet, of hours of meals, of wine, alcohol, coffee, tea, and tobacco; and of factory conditions. Stress is laid on the necessity of close collaboration of scientists with heads of great industrial establishments and public authorities, which can be carried out only by a permanent committee, having at its disposal a fully equipped laboratory and funds adequate for the remuneration of full time workers.

The Lumleian Lectures
ON
CEREBRO-SPINAL FEVER.

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON,
BY
SIR HUMPHRY ROLLESTON, K.C.B., M.D., F.R.C.P.,
EMERITUS PHYSICIAN, ST. GEORGE'S HOSPITAL; PRESIDENT, ROYAL SOCIETY OF MEDICINE.

LECTURE III.

(*Abstract.*)

IN the third lecture the mortality, prognosis, prophylaxis, and treatment of the disease were discussed.

Serum Treatment.

The influence of the serum treatment on the prognosis was dwelt upon; its effect had been shown to depend to a very considerable extent on its early use. It was particularly in the septicaemic or premeningitic stage that early and vigorous intravenous administration of serum might cut short the disease. Herrick had recently shown that the free administration of serum intravenously reduced the mortality to 18.5 per cent. from 62.5 per cent. obtained in severe cases treated either by intrathecal injection alone or by intrathecal injection combined with small amounts of serum intravenously. Another important point was that the serum should contain the antibodies specific to the infecting strain of the meningococci. Flexner's multivalent serum from the Rockefeller Institute, made by the use of forty strains of meningococci, had on the whole given better results than any other serum, and the use of a multivalent serum, or of a pooled serum of the more probable infecting strains, until the actual type of the infecting organism was determined, when the univalent type serum was employed, would obviously be the most promising method.

Effects of Serum Treatment.

By comparison of the duration of the disease in various series of cases in the pre-serum era with 830 serum-treated cases that recovered Flexner found that the period of active symptoms shortened and that the cessation of symptoms, which in the natural history of the disease was almost always by lysis, was by crisis in 30 per cent. of the cases.

To sum up: although the infectivity of the disease was low, and a small proportion only of the population was affected, the prognosis of cases untreated by serum was bad, the death-rate varied in different epidemics from 20 up to 90 per cent., and was very rarely less than 50 per cent.; whereas with serum treatment the mortality should not be above 30 per cent., and, with further improvement of the methods and serum, might be much less, the duration of attack was shortened, and the incidence of sequels diminished.

Prognosis.

A very acute onset with sudden loss of consciousness—the *apoplectiform onset*—had a serious outlook, but if the acute stage did not prove rapidly fatal recovery might eventually occur.

The outlook was bad in the fulminating cases also. The presence of a *rash* without further qualification did not affect the prognosis to any considerable degree, but a distinction must be made between the haemorrhagic rashes, and more especially large purpuric extravasations, and the non-haemorrhagic rashes. No prognosis as to a fatal result can be made from the leucocyte count. Similarly the *temperature* and the degree of *headache* had little, if any, ultimate prognostic significance.

Synovitis was a metastatic complication which, according to Netter, was seen in cases which eventually were cured. Possibly the local focus acted as a "fixation abscess" and raised the resistance to infection in the same manner as a vaccine. Fairley and Stewart found that a low blood pressure during the first three days was associated with a severe infection, and was therefore of bad omen. From routine examination of 184 patients, 116 of whom had optic neuritis, they found that the presence or absence of *optic neuritis* was of no value in prognosis, but they regarded *nystagmus* as pathognomonic of internal

hydrocephalus. The nature of the *cerebro-spinal fluid* was not a guide to the outcome of the case, except in so far as a large number of extracellular meningococci made the outlook bad. A purulent fluid might rapidly clear after intrathecal injection of efficient serum, or a clear fluid might rapidly become purulent.

The occurrence of *bronchopneumonia* naturally rendered the outlook very serious. Cheyne-Stokes's breathing and Biot's cerebral type of *respiration*, characterized by periods of apnoea at irregular intervals, pointed to approaching death, as did slowing of the respiration pulse ratio from the normal 1:4 to 1:2. Respiration might fail entirely while the pulse was well maintained. More than half the deaths occurred during the first week of the disease. Finally, the prognosis was difficult because sudden exacerbations from reinfection might occur most unexpectedly.

Cerebro-spinal fever in the past had a bad reputation for the number of disabilities it left behind—mental, nervous, and auditory, which in young children accounted for much deaf-mutism. But at the present time there was a general agreement that if the patient survived he was not likely, apart, perhaps, from deafness, to be permanently crippled, and mental changes did not appear to be much more frequent than after other severe diseases.

Prophylaxis.

The avoidance of overcrowding was an essential factor in maintaining the general health and, as had been pointed out in the first lecture, in preventing a rise in the rate of meningococcic carriers.

As the disease is spread by human carriers it should be exterminated if all the carriers were detected and isolated until they became permanently negative; but this was not possible in practice, and, moreover, the frequency of intermittent carriers and the failure of bacteriological tests would prevent such a drastic measure from being infallible. Two methods, short of complete search for and segregation and disinfection of all carriers in naval and military forces, were mentioned: (1) that search for carriers should only be made when a case of the disease had arisen, and only among the contacts, the carriers thus detected being segregated and disinfected; (2) that new entries should be examined and the detected carriers treated in a selective manner.

Details of the treatment of carriers were given, whether by local applications to the nasopharynux or by preventive vaccination.

Serum Treatment.

The use of antimeningococcic serum was not so simple or so uniformly successful as that of antidiphtheritic serum, which was antitoxic, whereas antimeningococcic serum, possessing bacteriolytic, bacteriotropic (opsonic), and anti-endotoxic properties, was more likely to fail in its powers as a whole. The extreme importance of specificity in the serum treatment of the disease and the absence of any benefit from non-specific treatment, or protein shock therapy, of which an extensive trial had unintentionally been made, were noteworthy. The important question, indeed, arose whether the intrathecal injection of inert serum might not do positive harm. Horse serum set up an aseptic meningitis and favoured the passage of meningococci through the meninges. It might, on the other hand, be argued that the increased number of phagocytes thus provided might do good. But it was significant that in 1915 the mortality among the naval cases treated with serum intrathecally was higher (61 per cent.) than among those treated in other ways (41 per cent.). In addition to the serum of immunized horses, the serum from convalescent patients had often been tried.

The serum treatment of cerebro-spinal fever might be directed against the general systemic infection before the meninges had been infected, or of the pre-meningitic stage, by the intravenous injection of antimeningococcic serum. The hypodermic or intramuscular injection of serum had also been advocated, but appeared to be infinitely less effective. The intrathecal injection of serum before the meningococci have invaded the meninges was not a harmless procedure.

The most efficacious method of introducing the serum into the blood stream was obviously by intravenous injection, and from experience of more than 100 patients Herrick found it both satisfactory and safe. His treatment aimed at the sterilization of the blood before the meninges had become affected and was an advance on the usual methods which were concentrated upon the later stage when meningitis was established. Large quantities (200–600 c.cm. in all) of serum were given intravenously and, when meningitis was present, active spinal drainage and comparatively small intrathecal injections of serum were carried out. No bad effects followed the large intravenous injections and serious anaphylaxis was seen in only one case. Of the four classes of cases—the abortive, the ordinary, the severe, and the fulminating—Herrick's most brilliant results were obtained in the severe, the patients often coming out of coma with rapid recession of the rash and symptoms so that in forty-eight hours many were apparently out of danger; large intravenous injections reduced the mortality of the severe cases from 64 to 19 per cent.

Doubtful cases should be submitted to lumbar puncture at once; if the fluid were turbid, serum should be given intrathecally; but if quite clear, serum should be withheld unless meningococci were subsequently found. If the cerebro-spinal fluid was sterile, and especially when a blood culture showed meningococci, intravenous injections of serum should be given without delay; and, as the septicaemic stage of cerebro-spinal fever lasted on into the meningitic stage, the intravenous injections should be continued for a time, together with intrathecal injections. Lumbar puncture and the injection of serum should be performed under a general anaesthetic or under the influence of an injection of scopolamine $\frac{1}{100}$ grain, morphine $\frac{1}{4}$ grain, and atropine $\frac{1}{100}$ grain in 5 minims of water. The access of serum to the base of the brain was aided by raising the foot of the bed, and Ramond recommended that the patient should lie for a time on his face in order to direct the serum to the region of the optic chiasma. When recrudescence or relapse appeared, serum treatment should be at once started again; when an interval of ten days or more from the last injection of serum had elapsed steps must be taken to desensitize the patient, otherwise severe anaphylactic symptoms might appear.

The number of intrathecal injections of serum should be carefully considered, for it was probable that harm might result from a large number of lumbar punctures. Grave symptoms and even sudden death during intrathecal injections had been ascribed to various factors, such as anaphylaxis, liberation of toxins by rapid lysis of meningococci, the toxic action of phenol, often employed to preserve the serum, and, most important of all, increased intracranial pressure and distension of the closed cerebral ventricles. To avoid this it was important to give a smaller quantity of serum than that of the cerebro-spinal fluid removed; the gravity method of administering intrathecal injections had been advocated and practised, especially in America.

Treatment of Closed Meningococcic Infections.

In chronic cases in which lumbar puncture was either dry or brought away clear and sterile fluid, but in which the symptoms persisted unaltered by intrathecal injection of serum, there might be adhesions cutting off parts of the spinal intrathecal cavity or more frequently closing the foramina of exit of the cerebral ventricles. Lumbar puncture might be performed higher up so as to obtain cerebro-spinal fluid above the adhesions, and if turbid meningococci-containing fluid was obtained intrathecal injection of serum could be given.

When from the symptoms there was reason to believe that there was a closed infection of the cerebral ventricles —ependymitis or pyocephaly—the logical course was to tap and inject antimeningococcic serum.

A much less serious procedure advocated by Bloch and Hébert for cases in which the meningococci might be encysted in situations in contact, but not in communication, with the meninges—for example, the fibro-vascular tissue of the choroid plexus—was the intravenous injection of serum.

Serum Disease.

In the main the serum rash and other manifestations were much the same after intrathecal as after hypodermic or intramuscular injection; but some difference would naturally be expected when the injection was made into the close neighbourhood of the central nervous system.

Flexner remarked that possibly the manifestations of serum disease were more frequent after the intrathecal than after the subcutaneous injection of serum; and from comparison of the naval cases of cerebro-spinal fever with the reported incidence of serum disease in diphtheria the lecturer was at first inclined to this view, but further sifting of the evidence did not show that there was any proof of this.

Clinical experience showed that the severity of the rashes and other manifestations of serum disease varied directly with the amount of serum injected. The rash was usually urticarial, erythematous, or morbilliform, but it might be scarlatiniform. In rare instances it was haemorrhagic; this might occur in association with a sore throat or an infected wound or boils.

Quite commonly a serum rash appeared, faded, and about two days later again became prominent; the first might be erythematous and the second urticarial, and both extremely irritating. These might be regarded as phases of the same reaction. In rare instances two serum rashes appeared at such an interval as to justify the term double serum rash and to suggest two separate reactions, which might be supposed to be the result of injections on different days.

The occurrence of arthritic and other manifestations of serum disease was also detailed, and the appearance of symptoms pointing to seric meningism and meningitis when a relapse was suggested.

True anaphylaxis might occur in a patient who had some time previously had an injection of serum—for example, for diphtheria, or as a prophylactic against tetanus. Although in the case of ordinary subcutaneous injections of serum anaphylaxis was, as a rule, more interesting than serious in its manifestations, the effect of an intrathecal injection of serum in a sensitized person, though fortunately uncommon, might be very grave. The anaphylactic symptoms were severe collapse, fall of blood pressure, rapid and feeble pulse, pallor, vomiting, feeling of thoracic constriction, failure of respiration, rapid eruption of urticaria, or even a haemorrhagic rash. In order to counteract these symptoms, the injection of adrenin and atropine had been recommended.

Vaccines.

Curative vaccines had been employed mainly in subacute or chronic cases when serum appeared to be losing its effect, and in a number of cases had been followed by improvement and recovery.

Apart from meningococcic serum, and perhaps vaccines, other forms of treatment were of very subordinate importance, and, except when serum could not be obtained or was inert, as it appeared to be in this country in 1915, were mainly of historical interest.

The employment of surgical measures to secure permanent drainage of the spinal subdural space had proved disappointing. In conclusion, the lecturer gave an account of the use of soamin, hexamine, and helmitol as cerebro-spinal antiseptics; they had not led to any strikingly good results.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HUMAN SERUM IN INFLUENZA.

DRIVEN to it by the urgency of a case of influenzal pneumonia, I determined to adopt the Scandinavian plan of taking serum from a convalescent patient, and the results so amply justified the experiment that I have since used it in three more cases.

The technique, crude it is true, but simple and effective, was as follows: After preparing the arm with petrol and distending the vein by means of a sphygmomanometer band, I punctured the vein with a sterile serum syringe, and withdrew into the syringe 20 c.cm. of the mother's blood, she being just convalescent from influenza; it was quickly ejected into a sterile test tube and centrifugalized by means of a cradle of string; the supernatant serum was again drawn into the syringe, and 8 c.cm. injected into the abdominal tissues of the child. In six hours the temperature had fallen, the breathing was almost normal, and the toxaemic blueness had disappeared. The subsequent history of the case was uneventful, the child making a rapid and complete recovery.

The mother readily submitted, in view of this result, to act as donor for another case, whose condition was extreme. Here a dose of 15 c.cm. of serum was given; the result was as marked as in the child's case, and the contrast of the delirious raving and struggling to that of quiet sleep, which resulted in less than two hours, was marked indeed.

Serum was again obtained from her for the third case, in which its result was the same.

For the fourth case the blood was taken from a patient who had had a simple attack of influenza without pulmonary symptoms; it was injected into the abdominal tissues of a patient suffering from pneumonia, and had the desired effect.

In the three later cases it was necessary to take the serum from one place to another; this was done by enclosing it in an old horse-serum phial, which was sterilized by boiling, and the neck reclosed in the Bunsen flame.

As the immunity following an attack seems from clinical experience to be only some six weeks, it is necessary that the blood should be taken from a person who is just convalescent from influenza, and although I have not had the experience it would seem likely that the value of the serum would rapidly deteriorate on keeping. As there seems to be evidence of a fresh outbreak I publish these notes in the hope that some extensive preparation of serum will soon be made.

W. E. HUFF-HEWITT, M.B., Ch.B.

Rhos, Colwyn Bay.

AN ABNORMALITY OF THE TENDON GROOVES OF THE RADIUS.

I THINK it worth while to call attention to a condition which I have recently observed in two or three cases. A lady who is in the habit of playing the piano frequently and for long periods at a time consulted me for a ganglion over the tendons of the extensor ossis metacarpi pollicis and extensor brevis pollicis near the styloid process of the radius. The disability was so great that she could no longer play the piano. I removed the ganglion under a local anaesthetic. No benefit resulted from this. A skiagraph showed nothing abnormal. Under a general anaesthetic I then cut down on the tendons and found them running in a groove very much in excess of the normal depth. The depth of the groove was accentuated by a slight overgrowth of the normal raised edges of the groove. The groove was widened with a chisel, the tendons resecured in place with a couple of catgut stitches and the wound closed. Immediate relief resulted.

I have met a similar condition in hospital practice where the piano playing element could be excluded, and it is possible that it is due to abnormal structure and not to any pathological state. I have adopted the same treatment with the same result. An anatomist friend has promised to investigate the point in the material at his disposal.

P. JENNER VERRALL, M.B., F.R.C.S.,
Chief Assistant, Orthopaedic Department, St. Bartholomew's Hospital, etc.

SHOT IN THE VERMIFORM APPENDIX REVEALED BY X RAY.

THE following case has, I think, some interest: C. P. H. V., a man aged 34, had since August last been subject to what he termed "bilious attacks." These had come on at intervals of about a fortnight and lasted from one to two days. They were associated with shivering, malaise, and occasional vomiting. As the attacks continued a bismuth meal was decided upon. He was accordingly seen by Dr. Ironside Bruce and the radiograms revealed the presence of what appeared to be two No. 6 shot, in the region of the appendix, which could be freely moved under the screen. The patient was thoroughly purged and a second skiagram showed the shot in the same position as the first. Colonel Gordon Watson removed the appendix a few days later and two No. 6 shot were found at the tip of the appendix, which showed signs of having been recently inflamed. The presumption is that the patient had swallowed the shot when eating game. He made an uneventful recovery and has had no further attacks.

London, S.W. W. B. AINGER, F.R.C.S.

Reports of Societies.

PNEUMONIA IN MACEDONIA.

AT a meeting of the Section of Medicine of the Royal Society of Medicine, held on April 29th, with Sir ARCHIBALD E. GARROD, President, in the chair, Dr. J. BURNFORD read a paper entitled "Further notes on the epidemic, with special reference to pneumonia in Macedonia." After describing influenza as he had seen it in France, at Woolwich, in Macedonia, and in the Dardanelles, with the Army of Occupation, where an outbreak occurred among Anzacs from the Jordan valley, he dealt more particularly with the pulmonary form. The symptoms, he said, fell mainly into two groups—toxaemic and mechanical. Sometimes the toxaemic symptoms predominated, producing a drowsy state, with indefinite physical signs of pulmonary disease. At others the obstructive lesions were more manifest, with coughing, cyanosis, asphyxia, and noisy respirations. The physical signs of involvement of the lungs were often most misleading, and even when definite evidence of consolidation was manifest, it must still be appreciated that in all probability the entire lung was affected, and not only that part over which the signs were detected. A recumbent position was the rule. Cyanosis was a common and marked feature, and respirations were variable in character, but increased out of proportion to the pulse rate, which sometimes remained normal, although sometimes increased to a less degree than the respirations. He regarded the respiratory changes as dependent on the pulmonary lesions, for they only occurred with the pulmonary form; venesection failed to give relief, histological examination showed sufficient destruction of aërating tissue to account for the symptoms, temporary relief often followed the administration of oxygen, and alteration in the position of the patient produced no variability. After describing other symptoms, such as delirium, lethargy, deafness, vomiting, albuminuria, and haemorrhages, he said that the physical signs were very anomalous and varied, even in the same patient, from time to time. There might be crepitations with absolute dullness, with impaired resonance, or with whispering pectoriloquy (with or without tubular breathing), silent lung or choked lung into which air entered with difficulty. The sputum might be tenacious, blood-stained, glairy with muco-pus, nummular or purulent, and might contain much bright blood, but was seldom the characteristic rusty variety seen in croupous pneumonia. In favourable cases the acute symptoms ended by crisis in some, by lysis in most. Though the toxaemia might be overcome, the pulmonary lesions did not immediately resolve; resolution was always slow and might be prolonged for weeks or perhaps indefinitely. Consequently, both increased respirations and cyanosis might persist. The voice when lost often failed to return for weeks, and there might be actual ulceration of the vocal cords.

He laid particular stress on two pathological changes which were found at every autopsy: *universal friability* of the lung tissue and *emphysema*. It was evident that the specific changes occurred in the lungs, and that the entire lung tissue was implicated. Was there a destructive activity exerted by the toxin on the lung tissue facilitating the emphysematous change, or was the widespread emphysema associated with so much destruction of elastic tissue as to produce the undue friability? He raised the question as to whether so friable a lung condition was compatible with recovery, and said that the same problem arose in connexion with hepatization of the lung in croupous pneumonia.

The causes of death were oedema, asphyxia, exhaustion, and, rarely, cardiac failure.

Speaking of treatment, he said that individual treatment was purely symptomatic. Brandy and champagne were freely given. Salicylates relieved the pain in the toxaemic stage. Expectorants were useless. Morphine and heroin were used at all times to produce sleep. Camphor, atropine, digitalis, and strychnine produced no appreciable result. Quinine did neither good nor harm. Inhalations of menthol and eucalyptus gave much relief, and oxygen relieved the cyanosis in many cases. He spoke of the probable value of serum treatment, but had only an opportunity to try it in one case when a serum was given obtained from several selected convalescents, and led to recovery in a very serious case.

In conclusion he showed on the screen a series of charts demonstrating the various types of cases, including unresolved consolidation, abscess formation, infective endocarditis, and a series of cases in which malaria was a complication. Some microphotographs illustrated the pathological changes and included marked emphysematous changes in parts of lungs apparently not implicated in the pneumonic process.

The PRESIDENT spoke of the paper as providing an accurate and elaborate account, too important and too detailed to be discussed satisfactorily in the time available. He indicated the following outstanding features of the epidemic from his experience in Malta: oedema, foci of suppuration, cyanosis with scanty physical signs, delayed resolution, and the prevalence of secondary infections.

Dr. F. S. LANGMEAD said that the account corresponded closely with his own experience in Macedonia. He agreed that the main clinical features were the severe toxaemia, the prominence of mechanical obstruction, which, in spite of the severity of the toxaemia, bore a greater proportion to it than in ordinary pneumonia, the irregularity of the fever, the indefiniteness of the course, the obscurity of the physical signs, the delayed or defective resolution, and the high mortality. He spoke also of the frequency of purulent expectoration, of mental depression with suicidal tendencies, and of suppurative or gangrenous parotitis as a complication.

Dr. C. R. BOX said that the description was a faithful one for the epidemic as it occurred in England. There could be no doubt that the bronchiolectasis or "honeycomb" lung was a feature of the bronchopneumonic not of the croupous form. The unresolved areas often underwent practically no change for a considerable time.

PUBIOTOMY.

AT a meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland, held on March 21st, Dr. JELLETT read a paper on the radical cure of contracted pelvis. It was time, he said, to put the operation of pubiotomy on a surer footing, and to insist not only that it was a means of ending satisfactorily a difficult labour but also a cure for certain cases of contraction. As a proof that the operation was safe he gave statistics of thirty-five operations with two maternal and five fetal deaths. The two former resulted from fatty degeneration of the heart and miliary tuberculosis respectively; of the five fetal deaths one occurred in the second of twins and another in a hydrocephalic fetus. As a proof of its suitability, he gave the history of two patients with approximately equal degrees of pelvic contraction. One had to have Caesarean section done four times. The second had pubiotomy done at her first labour, and subsequently delivered herself three times spontaneously, and once was delivered by the forceps; all the children were alive. He wished to establish the following points:

First, that pubiotomy is not merely a means of terminating a difficult labour, but rather of effecting a radical cure of pelvic contraction. Out of 45 labours previous to pubiotomy, six children were delivered alive spontaneously and four by forceps, while in 22 labours occurring subsequent to the labour at which pubiotomy was performed 11 children were delivered alive spontaneously, 6 alive by forceps, and 2 by a second pubiotomy, in cases in which bony union had occurred. Three children were born dead, one death being due to placenta praevia.

Secondly, that pubiotomy is indicated in both the first and second degree of contraction.

Thirdly, that it is not an alternative to a Caesarean section, which is merely a means of ending a labour, whilst pubiotomy brings about a cure.

Fourthly, that pubiotomy should never be postponed willingly to the end of the second stage of labour, but should ideally be carried out independently of pregnancy in cases in which its effects are likely to be required.

Fifthly, that every effort should be made to prevent bony union of the cut surfaces.

The latter half of the paper dealt with certain points in the technique of the operation, and with the necessity for accurate measurements of the internal diameters of the pelvis by Skutch's pelvimeter, in order to exclude unsuitable cases. He concluded that the usually accepted minimum of 7 cm. in the conjugate of a flat pelvis, or 7.5 cm. in a generally contracted pelvis, was correct, and

that below this pubiotomy should not be attempted. He laid stress on the necessity for early diagnosis in order that the operation might be carried out under the most favourable, instead of as at present under the least favourable, circumstances. Lastly, he thought patients should no longer be deprived of the advantages of so valuable an operation because of past prejudices against it.

Dr. GIBBON FITZGIBBON thought that when the necessity for pubiotomy arose in labour the results of the operation were very satisfactory, as shown by Dr. Jellett's tables, that the prophylactic effect applied to the subsequent labours, and that little more was to be gained by doing the operation in anticipation of its being required.

Sir WILLIAM SMYLY said that in cases of flat pelvis with a true conjugate of less than three inches he would still advise Caesarean section, for, although he was impressed by Dr. Jellett's views and the arguments by which they were supported, he was not altogether convinced that the permanent enlargement resulting from pubiotomy would in such cases generally be sufficient to ensure the passage of a full-term child. It would seriously affect the reputation of an operator if, having performed a serious operation before term with the express purpose of securing an easier delivery, he were obliged to do it again during labour. Yet it was admitted that where bony union occurred that would be likely to happen. Dr. Jellett believed that such union could with certainty be prevented, but that remained to be proved. Nor was it certain that when it did not occur sufficient permanent enlargement would be secured; that was really the question at issue. If it could, then Dr. Jellett's position was secure, but if it failed to do so in a considerable proportion of cases it would have to be abandoned. The histories of the cases delivered in the Rotunda Hospital by pubiotomy, as regarded their subsequent confinements, supported Dr. Jellett's views. If this operation really resulted in a radical cure, there was much in favour of its early performance, both with regard to the patient's safety and the operator's convenience. He believed the suggestion to have originated with Dr. Jellett.

Dr. HASTINGS TWEEDY agreed as to the great obstetrical value to be attached to pubiotomy. The paper to which they had listened proved convincingly that the operation should (in suitable cases) be performed early in the first stage of labour rather than when the vitality of the infant had suffered by long and ineffectual methods of delivery. He could not approve of subjecting an unimpregnated woman to the inconvenience of this operation on the off chance that it might on some future occasion mitigate the perils of delivery; nor of its performance early in pregnancy. It could not yet be claimed that the operation would procure with certainty a normal delivery, and it was very unlikely that bones united by fibrous tissue would have the same degree of expansion as was present immediately after their severance.

Dr. SOLOMONS thought that a prophylactic pubiotomy on the non-impregnated woman would be reckless. It seemed to him that real advance would be made if pubiotomy were performed after the child had become viable. By waiting for this period in pregnancy there would be time for the soft parts to recover if labour started at term; or, if the operation induced a premature labour, the child would be viable. He noted that Dr. Jellett was one of those who did not mind a delivery *per vias naturales* after Caesarean section. He (Dr. Solomons) had reported one such case. According to figures published by Hartmann some years ago, the statistics of repeated Caesarean section were better than those for the single operation.

Dr. PUREFOY said that the paper showed how, in certain cases, the operation of pubiotomy might bring about a cure of pelvic deformity, and how the dangers and difficulties caused by it in parturient women might be escaped. How far it might be found advisable in the future to perform prophylactic pubiotomy only long experience could decide.

THE American Pediatric Society will hold its thirty-first annual meeting at the Chalfonte Hotel, Atlantic City, New Jersey, on June 16th, 17th, and 18th, 1919, under the presidency of Dr. Edwin E. Graham of Philadelphia. The meeting has been arranged to coincide with the Congress of American Physicians and Surgeons, which will be held at the Hotel Traymore, Atlantic City, under the presidency of Dr. Simon Flexner.

Reviews.

"THE ARCHIVES OF NEUROLOGY AND PSYCHIATRY."

IN the *Archives of Neurology and Psychiatry*, vol. vii, 1918,[1] Dr. MOTT republishes in convenient form a series of recent papers and lectures by himself or by workers under his direction, which have already appeared in other journals. The reason for this is that the pathological laboratory of the London County Mental Hospitals, which has lately been removed from Claybury to the Maudsley Hospital at Denmark Hill, has been engaged in the routine work of a military medical centre, and the usual pathological investigations which are associated with Dr. Mott's laboratory have had to be curtailed or postponed. The volume forms a contribution to scientific literature of considerable value, and it is of advantage to have in compact form the results of researches of the same investigator or of those who have worked in the same scientific atmosphere.

The papers include several on the histological changes observed as the result of high explosives, and in such conditions as mental disease, hypothyroidism, gas poisoning, and commotio cerebri. A valuable article on the pathology of venereal disease, given originally as a lecture in 1917, well repays a second perusal, especially at the present time when at last the real facts of venereal disease are receiving general recognition.

As is well known, Dr. Mott has been for some time in charge of a large military department at the Maudsley Hospital devoted to non-organic nervous disorders; work of considerable magnitude has been carried on and is still continued by him and, under his inspiration, by the school of neurological study which has grown up there. With the possible exception of venereal disease, no one subject in the whole of medical science deserves greater sympathy from authority or is more likely to be pursued with greater benefit to the country than that of the diagnosis and treatment of the so-called functional nervous disorders. Observations bearing on this work are published by Dr. Mott in the last article in this volume, and it is to be hoped that this important branch of medicine may find one of its permanent homes at the Maudsley Hospital.

DISEASES OF WOMEN.

WHILE Dr. H. S. CROSSEN of Washington was engaged in revising his *Diseases of Women*[2] for a fourth edition he was called to active service as a member of the Medical Officers' Reserve Corps of the United States Army, and the revision was completed by Professor Ehrenfest of St. Louis University, who has written what is now a necessary adjunct to any textbook of gynaecology—a chapter on the endocrine glands and their relation to the female sex organs. This particular chapter is well done, and gives a useful digest of the subject. Dr. Crossen addresses himself avowedly to the general practitioner, and his methods of approaching both diagnosis and the choice of treatment are well adapted to assist those who use the book as a guide in gynaecological practice. Much space is devoted to practical detail, fully ten pages being given to the subject of vaginal douching. The elaborate description and illustration of some unusual forms of pessary is not calculated to benefit the reader—still less his patients.

The illustrations are very numerous and very unequal in value. What justification can there be for devoting a third of a page to an ordinary photograph of a woman and her child as an illustration of a case of extrauterine pregnancy operated on at full term? The microphotographs are not very satisfactory or helpful, and will convey little to those unfamiliar with the subject.

SYPHILIS OF THE NERVOUS SYSTEM.

THE systematic diagnosis and treatment of neuro-syphilis are presented by SOUTHARD and SOLOMON of the Harvard Medical School in a somewhat ambitious work entitled

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[1] *Archives of Neurology and Psychiatry.* Edited by F. W. Mott, M.D., LL.D., F.R.S. Vol. vii, 1918. London: P. S. King and Son, Ltd. 1918. (Cr. 4to, pp. vi+304; illustrated. 10s. 6d. net.)

[2] *Diseases of Women.* By Harry Sturgeon Crossen, M.D., F.A.C.S., Associate in Gynecology, Washington University Medical School, etc. Fourth edition, revised and enlarged. London: Henry Kimpton. 1918. (Roy. 8vo, pp. 1160; 800 figures. 32s. net.)

Neuro-Syphilis,[3] in which 137 case-histories are analysed. The book has been written primarily for the general practitioner, and the material employed amounted to over 2,000 cases of neurological syphilis.

We are glad to see the statement confidently made that the diagnosis in many cases between incurable paresis and cases of syphilis of the nervous system resembling paresis but which are amenable to treatment, is impossible. The lesson to be drawn is that all cases should be given the opportunity of benefit from modern treatment.

Proper importance is given to the frequency with which cases of paresis are diagnosed as neurasthenia, through omission to apply modern tests, and also to the fact that a negative Bordet-Wassermann reaction in the serum does not necessarily exclude syphilis of the nervous system. Emphasis is laid, too, on the diagnostic possibilities of tabes dorsalis years before the stage of locomotor ataxia is reached, a subject of which many students are profoundly ignorant. A list of the symptoms and signs of tabes dorsalis in the order of their frequency, given on page 93, is of small value, more especially as it omits entirely to mention one of the commonest early signs—absence of ankle-jerks.

The full page charts interspersed between the pages might be omitted with advantage in our opinion; many of them are lists of the clinical and anatomical forms of neuro-syphilis. A few expressions, not uncommon in works by American authors, but loosely written according to our ideas in England, somewhat spoil the ease with which the case-notes are read. For instance, on page 43, a gentleman is reported to have had "Achilles" on the right side only. We observe also that the Fuchs-Rosenthal chamber is recommended for cell counting, and that nothing is said of the more ready method by means of the ordinary Thoma-Zeiss haemocytometer.

In any book which deals purely with the diagnosis and treatment of neuro-syphilis a full account of the operation of lumbar puncture should find a place. It is not sufficient merely to say that it should be done "in the usual manner." The operation should not be done at all unless a fluid which is fit to be examined can be guaranteed as a result of the operation.

We regard this volume as a useful book of reference, containing a great deal of information and illustrated by good plates, but the examination and diagnosis of nervous diseases is learnt better at the bedside than by the reading of any books.

A HANDBOOK OF RE-EDUCATION.

THERE are two ways of dealing with the disabled man: the one by fussy sentimentality, the other by practical sympathy. The first brings moral disablement in the train of the physical; the second re-establishes mental and moral capacity and enables the individual to discount the physical handicap. The Federal Board for Vocational Education of the United States has issued a valuable compendium of information[4] showing how the great problem brought about by the war is being dealt with in countries affected by the war. The experiences of France, Belgium, Italy, Germany, and Austria-Hungary, of Great Britain, Canada, and other British Dominions, are given in considerable detail, and there follows a bibliography of no fewer than 52 pages of closely set print. The reader will welcome the book as a digest of such a massive literature. The book gives a story which well illustrates the ill effects of ill-considered action:

> In one of the allied countries the wife of a returned soldier complained to the representative of a patriotic relief agency, which had been attending to the family needs while the chief breadwinner was at the front, that her husband would never spend any time with her or with the children. She had wanted that afternoon to have him accompany them to the park, but he disdainfully refused, saying he was going out for an automobile ride and later to a "sing song" at one of the fashionable hotels. The musical entertainment referred to was being provided by the society ladies of the city, so mother and children went to the park alone, while the "hero" was receiving appropriate recognition of his services.

Happily such misdirected efforts at alleviating the lot of the disabled weigh little in the scale as compared with the mass of earnest work which has been done by both private and public enterprise. The bulk of the volume is taken up with the development and gradual extension of the recognition of national responsibility in the matter, and of the undoubted success which has followed the working out of the several schemes of re-education. Specific data is given of the towns and cities where work of various orders is taught. The basis of the most successful schemes is at once simple and sound. Train the man to do the work which he has done before, if that be possible; if not, train him in that work which is closest allied to his former work, so that his former experience will be utilized as the groundwork of his re-education. By such means the man comes most swiftly to the appreciation that all is not lost, but that he can become a man, and a useful man, once again.

NOTES ON BOOKS.

THE *Minutes of the General Medical Council*[5] for 1918 have been issued in a volume of 404 pages. In addition to the Minutes of the Council and its various committees, it contains twenty appendices of reports presented by the committees. The *General Index to the Minutes of the General Medical Council*[6] has also been brought up to date, and includes the minutes from 1903 to 1918 inclusive.

Industrial fatigue is a subject of great importance in the management of especially large industrial undertakings. To what extent it exists can only be judged by the quantity and quality of the output. Any such inquiry, however, is a matter that requires great circumspection if the conclusion is to be reliable. Dr. FLORENCE, in a book on the *Use of Factory Statistics in the Investigation of Industrial Fatigue*,[7] has pointed out the many circumstances that are apt to vitiate the result. Of all the available means for that purpose, the books of the factory afford the most valuable data by showing the numbers of absentees at a given period. But even that information is not enough, considering the number of causes that may lead a worker to absent himself from his duties. The only way to avoid all ambiguities is that the inquirer should personally examine the circumstances to which the absence is or may be attributed.

The seventh *Bulletin of the International Association of Medical Museums*,[8] being the special war number of the American and Canadian sections, is occupied largely with twenty-four valuable summaries of the pathology of the chief diseases or disabilities affecting armies and characteristic of the war, together with references to the periodical literature of the subjects with which they deal.

We have received a further instalment (the seventh) of the reprint of Linnaeus's letters[9] that is being issued under the auspices of Upsala University. These are letters from Linnaeus himself and from several of his correspondents, and are occupied largely with matters relating to botany and natural history.

The third edition of Professor BARD'S manual for the clinical laboratory[10] gives a clear account of the chemical, physical, microscopic, bacterial, and experimental investigation of the clinical material derived from sick persons of every sort. It is written for the medical student's use in the wards and side-room or laboratory, and contains all the information to be looked for in a modern textbook of clinical methods for laboratory use. It may be recommended to the attention of students in search of a French guide to the subject.

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[3] *Neuro-Syphilis.* By E. E. Southard, M.D., Sc.D., and H. C. Solomon, M.D. Boston: W. M. Leonard; London: Stanley Phillips. 1917. (Roy. 8vo, pp. 496; illustrated. 21s. net.)

[4] *The Evolution of National Systems of Vocational Re-education for Disabled Soldiers and Sailors.* By Douglas C. McMurtrie. Prepared at the Red Cross Institute for Crippled and Disabled Men. Washington: Government Printing Office. 1918. (Med. 8vo, pp. 319; illustrated.)

[5] and [6]. London: Constable and Co. (12s. and 2s. 6d. respectively.)

[7] *Use of Factory Statistics in the Investigation of Industrial Fatigue.* A Manual for Field Research. By Philip Sargant Florence, M.A.Camb., Ph.D.Columbia. Studies in History, Economics, and Public Law. Edited by the Faculty of Political Science of Columbia University. Vol. lxxxi, No. 3, whole number 190. New York: Longmans, Green and Co.; London: P. S. King and Son. 1918. (Roy. 8vo, pp. 153. 5s. net.)

[8] *The International Association of Medical Museums.* Bulletin No. VII. Edited by Drs. A. S. Warthin, C. V. Weller, M. E. Abbott, and L. Gross. Michigan, U.S.A.: The Ann Arbor Press. 1918. (Med. 8vo, pp. 414.)

[9] *Bref Och Skrifvelser af och Till Carl von Linné.* Vol. I, Part VII. Edited by Th. M. Fries and J. M. Hulth. Upsala: A. B. Akademiska Bokhandeln. (Roy. 8vo, pp. 192. 5 kr.)

[10] *Précis des Examens de Laboratoire Employés en Clinique.* By L. Bard, Professor de Clinique médicale à l'Université de Genève, etc. Avec la collaboration de MM. G. Humbert et H. Mallet. Third edition, revised and enlarged. Paris: Masson et Cie. 1918. (Post 8vo, pp. xxvi + 836; 162 figures. Fr. 14.)

PARLIAMENTARY REPRESENTATION OF THE MEDICAL PROFESSION.

A CONFERENCE called by the Medical Parliamentary Committee was held at the Central Hall, Westminster, on May 2nd. About sixty representatives were present, not only from medical associations, but also from nursing and pharmacy services. The purpose of the gathering was to form a Medical Parliamentary Committee of a permanent kind which should be charged with the following duties:

(*a*) Supplying information of the trend of expert opinion on health questions to medical members of Parliament; (*b*) supplying early information of impending legislation to the constituent bodies; (*c*) facilitating communication between the several bodies affected by the proposed legislation; and (*d*) assisting in increasing medical representation in Parliament.

Sir WATSON CHEYNE, M.P., who presided, said that the whole question had arisen because the medical profession did not succeed in getting sufficient importance attached to its opinions in legislation. It was very slightly represented in Parliament, though he did not himself lay great stress upon any considerable increase in the number of medical men in the House of Commons; it was more important that those who were in Parliament should act together, and should be informed and supported. To this end a central body, neutral in politics, was needed to focus professional opinion. The objections which he had heard to the Medical Parliamentary Committee were mostly directed against its origin, but such a movement must originate in some quarter, and if there were any bias it could be afterwards redressed.

Dr. ARTHUR LATHAM, in moving that a permanent Medical Parliamentary Committee be formed, said that some efficient machinery, alike for ascertaining and for ventilating the views of the profession, was called for. Hitherto the profession had had a habit of "missing the train" in politics. He was not satisfied that any existing organization had the time or the machinery for the purpose in view; moreover, most of the existing organizations were not wholly representative of the profession, and were suspected by the public of furthering the interests of the medical profession alone. If the profession was to get political power it must have the sympathy of the public, and be able to show that the public and professional interests were bound up together.

Sir HENRY MORRIS, in seconding the resolution, regretted that so little notice had been taken of his suggestion that the proper course would be to have the medical profession as a body directly represented in Parliament just as the universities were. He hoped the British Medical Association would send representatives to the proposed committee, and that those representatives, so far as their membership of that body was concerned, would detach themselves from all the other interests and activities of the Association.

Dr. H. B. MORGAN wished to move an amendment, recommending the British Medical Association to co-opt to its Medico-Political Committee representatives of other national organizations so as to secure a collective medical opinion. The CHAIRMAN refused to accept such an amendment, and Dr. Morgan spoke against the resolution, and declared the Medical Parliamentary Committee to be a body of consultants representing no one but themselves.

The motion that a permanent Medical Parliamentary Committee be formed was carried, with one or two dissentients. In reply to a question from Dr. A. C. FARQUHARSON, M.P., as to the vote-value of those present, the CHAIRMAN said that representatives of the various associations were not pledging their respective bodies in any way; the meeting was purely a conference. A discussion then took place on the four suggested purposes of the committee (given above), in particular as to the form of words under (*a*), and it was eventually agreed that this should be: "Supplying information of the trend of opinion on health questions."

Sir JENNER VERRALL said that he could not pledge the British Medical Association, which he represented, for or against the proposal to form a permanent Medical Parliamentary Committee. The Council of the Association would no doubt consider and report on the matter to the Association, but it might easily be that the Association would feel bound to decide that the proper way was to construct such a committee within itself, with or without the co-option of other bodies outside. A point of order was raised here, on the ground that the speaker was dealing with a matter which had already been decided by the conference, but the CHAIRMAN, while admitting that the speaker was technically out of order, allowed him to proceed, and he went on to say that the British Medical Association at present did all the four things which it was stated that day the Medical Parliamentary Committee should be formed for the purpose of doing. If it were left to the Association to construct such a committee, he believed that the resulting body would command the confidence of the profession and of the ancillary non-medical organizations which it was proposed to bring in. He was aware that the Association was not regarded in all quarters as representative, but it was a democratic body, and open to modification or reconstruction.

Dr. E. H. M. STANCOMB said that the main purpose of the proposed committee was to gain political power for the medical men of this country. All industries were represented in Parliament save the fundamental industry of the country—that of health, which had no representatives as such. No medical man in Parliament went there as a doctor; he was elected under the party system. Sir WILLIAM WHITLA, M.P., objected to this statement, as did also Dr. NATHAN RAW, M.P., and Dr. A. C. FARQUHARSON, M.P.; and Sir WILLIAM WHITLA again protested when Dr. Stancomb went on to say that all of them had got into Parliament by party organization more or less. Dr. Stancomb added that he himself was hoping to go into the House of Commons as a representative of national health pure and simple.

Dr. C. BUTTAR then moved a resolution of many clauses (some of which were amended in the course of discussion) defining the constitution of the committee. He said that the present plan was to get representatives of existing associations to form the majority of the committee; elections from the whole profession on a territorial basis might follow later on. He defended the proposal to bring in representatives of certain non-medical associations, representing nursing, pharmacy, and hospital administration. The resolution was seconded by Dr. JANE WALKER, who thought it very necessary that the nursing service should form an integral and definite part of the committee.

Dr. VIVIAN GREENYER urged that the committee should consist of medical practitioners only, and that the non-medical bodies should be represented on a subcommittee. He and Dr. A. G. NEWELL and others made suggestions as to additions or exclusions, and finally it was agreed that the committee should consist of a representative or representatives of any society or association of registered medical or dental practitioners; two representatives appointed by the nursing profession; one representative each of the midwifery service, the pharmaceutical societies, the British Hospitals Association, and the Housing and Town-Planning Association; the editors of the BRITISH MEDICAL JOURNAL, the *Lancet*, the *Medical Press*, the *Medical World*, and the *Medical Times;* all the medical members of Parliament; co-opted members, not exceeding 20 per cent. of the committee (of these co-opted members not more than one-fourth were to be engaged in consulting medical practice), and directly elected representatives of the whole medical profession, to be elected immediately the committee's financial position warranted the necessary expenditure. A member of the conference pointed out that if every medical society in the kingdom was to be admitted to representation the Connaught Rooms would be necessary for every meeting, and, accordingly, it was decided that the provisional committee should set up a subcommittee to determine the basis of society representation.

Mr. E. B. TURNER, who believed that the committee would make for the unity of the profession, asked where the finances of the committee were to come from. Were the profession to be asked to subscribe, or would whatever bodies constituted the committee be expected to provide the money? Dr. LATHAM replied that, so far as could be estimated, if the committee had a representative in the lobby of the House of Commons and a secretary, some £1,500 to £2,000 would be required annually. It was possible that some of the organizations, according to their representation, would find certain funds. Already about £700, subscribed privately, had been expended. The money could be found for the first few months; after that the body which was formed would have to stand or fall by its achievements.

It was then agreed, on motions from the chair, that the committee should meet at least twice a year; that it should appoint an executive of not more than twenty members (not more than a quarter to be engaged in consulting practice), and that this executive should meet at least once a month. The conference then broke up after a three-hour session.

MOTOR NOTES FOR MEDICAL MEN.

BY H. MASSAC BUIST.

LIGHTENING THE BURDEN OF COSTS.

MEDICAL men will be quick to appreciate the intelligent treatment which Mr. Austen Chamberlain has accorded motoring in the current Budget. The effect of the various Government proposals should begin to relieve doctors within the next week or ten days. Thereafter there will be no occasion to obtain licences to buy motor fuel; the supertax will have to be paid no longer; the medical man will have to pay only the single tax on the gallon of petrol at half the rate paid by the general public; the petrol vendors will be practically freed from control, and the best quality spirit will be available to the public in place of being monopolized by the flying services, so that the quality of the petrol will improve while its price will be substantially reduced. Moreover, though in the case of the medical man under these new conditions the amount of duty he pays per gallon of petrol used is not a heavy burden as we count costs in the post-war period, nevertheless, if he chooses, he can escape it altogether by using benzol, which is duty free to the motorist as it is to the dyer or other user, because in the course of a war in the submarine era and an age of flying and motor transport this island nation discovered the vital need of having an industry for the home production of motor fuels, so that to-day a large and growing benzol industry exists. Its development is merely the beginning, and it is a matter of national security as well as of economy that it should be developed to a much greater extent. Should any emergency arise we should want motor fuel on a much faster scale than the amazing rate at which it was used in the German war; while from the mere point of view of national finance it is essential to produce everything possible in these islands, both to reduce occasions for the exportation of money and to provide the maximum employment. Post-war benzol seems satisfactory in quality, but perhaps the best advice is to use one gallon of benzol to two gallons of petrol until we have wider experience of benzol.

CARS NOW BEING IMPORTED.

Two other items in the Budget affect motoring. The original scheme of the Board of Trade was that there should be no car imports until September, as it is recognized on the commercial side that after five years of war activities, and in face of the abnormal cost of raw materials and labour, our industry cannot expect to be working on a peace basis before that period. On the financial side it is of course pre-eminently undesirable to export a single pound on the acquisition of anything that can be bought here, where we are already paying a million a week by way of out-of-work doles, and the purchasing value of the sovereign is appreciably less than ten shillings. As regards the shipping situation, too, the first need is still for foodstuffs and raw materials.

Even in America, where the motor industry has only been directed to war activities for a brief period and, even so, kept mainly on its ordinary classes of work, there is no pretence that the motor manufacturers of the United States can get back to peace conditions this year. Most of them describe themselves as going slow, and statistics reveal that they will be 700,000 cars short of their home demand this year. But the Americans, who have doubled their national wealth as the result of this war, like the experience so much that, in place of resting on their achievements, they are making more strenuous efforts than ever to increase their national wealth in the future. Therefore they are making unprecedented efforts to increase export trade, which they intend to pursue no matter how short the home market goes. The reasoning is sound. The world's industries have been so enormously inflated during the war that it is only a matter of time until there will be overproduction all round. That is when every nation will stand in sorest need of export trade. American industry intends to have a hold on the biggest export trade in the world against that crisis, for it knows that, once established, no nation but the Japanese could dislodge it; whereas if part of the current shortage of cars in America were to be made up by imports from Europe, such business when lean times come will lapse automatically, since they can produce so much cheaper than the heavily taxed, war impoverished countries of the Old World. So the American importers were resolved not to wait until September to bring cars into this country, and they had an instrument ready to their hands in the permits granted to individuals not wholly dissociated from politics by the Board of Trade to bring cars into this country despite our need of foodstuffs and raw materials, and in the issue they have just wrung the concession whereby between now and September there may be imported half as many cars as were imported over a similar period in 1913.

HOW LABOUR GOVERNS CAR COSTS.

Mr. Chamberlain, however, while unable to make the importation of cars as profitable to the Exchequer as the bringing in of tobacco, which Mr. Bonar Law has described as being "nearly as profitable as bringing in gold," has contrived that one-third of the value of each car imported shall go to the Exchequer by way of duty. That does not disturb the American importers. Their scale of production is enormous and the costs are infinitesimal compared with our own, especially as American labour, while just as keen as our own on high wages, is better educated and is therefore eager to give output for money. For instance, it is sometimes advanced as an excuse for raising the wages of British labour that the American worker often takes home more money at the week-end than the Britisher; but if we entirely draw up the curtain we discover that the direct labour charges on producing a completely equipped 20–30 h.p. American car are £20; whereas for a British car of the same capacity they are more than ten times as much. What must be the situation, then, now that Japan is entering the motor manufacturing industry, with wages averaging about one-tenth of American wages and on American systems of production? If two Japanese workmen be worth only one American workman in the matter of output, still the Japanese will produce at one-tenth of American labour costs, which in turn are one-tenth of ours. The point seems to have escaped the students of manufacturing conditions the world over, yet not many years will pass before we shall be confronted with the results of this complete change in the situation. Its interest to the medical man is not merely academic. On the one hand he can foresee clearly that the world situation will ensure a speedy return to the production of cheaper and yet cheaper cars, while, on the other hand, if he is resident in the British Isles it is abundantly plain either that labour will have to become educated or that the national expenditure will reach a scale that cannot be maintained.

THE DOCTOR'S CAR MUST BE A BUSINESS PROPOSITION.

At present the conditions of car production in this country are wholly artificial and uncertain, therefore the risks are great; yet the need to provide employment is paramount. It cannot be pretended that the average cost of the cars issuing from our factories to-day is practical from the point of view of the average medical man for whom a motor vehicle is an essential part of his business equipment, which ought, therefore, to be available on terms that make it profitable to him to acquire such an instrument. There are, of course, exceptions here and there where relatively good value for money is offered. I do not know a single manufacturer who likes charging as much as he is compelled to ask for his current products. Some say that if the problem began and ended in their own works they think that by the autumn they could get back to something like a reasonable basis, because by then people would really be looking for work, as the Government can scarcely go on devising new unemployment doles; but the motor manufacturers are dependent on other industries, such as the steel, which, in turn, is dependent on the coal industry, with which the Government has dealt in a fashion that has permanently upset the basis of production of every engineering industry in this country from the raw material to the finished product. Oil and electricity will have their effect within the next three or four years, but it is not possible to foresee at present how they will give our industries all the steel and raw materials they need at competitive prices.

In the meantime, our motor manufacturers are really living from hand to mouth; but the Chancellor of the

Exchequer has his eye on the unemployment doles as well as on revenue, therefore he offers some sort of encouragement to industry to take the extraordinary risks of manufacturing at this period, when none can foretell how soon that relatively small section of the public which can afford and is willing to buy 1919 motor cars practically irrespective of price will have been supplied.

PENALIZATION OF NEW DESIGNS.

Between that market and the normal market of cars there is a vast price gap which most British manufacturers do not see their way to bridge, though all are trying to solve the problem by this means or that. Every manufacturer is very keen to embody in his car every lesson he has learned in the last five years; but if he alters his design to this end—often the change has been evolved to enable the given part to be made at a fraction of the former cost with a fraction of the labour, yet to give better service—labour says: But this is an entirely new proposition, and we must see that we get as much for making it. The price labour is getting in the factories now for working on an article of precisely the same design as it did before the war averages more than 100 per cent. more. When the new design of a given part comes up for consideration, the prices being demanded by labour on the average are such as to bring the cost of production up to at least the same cost had the old design been maintained, despite the fact that there may be only a quarter, or perhaps one-tenth, as much work in the production of the given new-style part. It is only another version of the nation's old enemy, the ca' canny policy, and it is a version which of course makes manufacturing enterprise impossible once the small section of would-be motor owners to whom money is no object has been satisfied. There is one solution of the problem which seems inevitable, and possibly the problem will not be solved until it comes automatically into operation with the lapse of time. The general public which keeps our motor industry in employment cannot afford wholly impossible highly priced cars. It will therefore be impossible for them to buy, and it will only want three months' demonstration of the fact to educate labour; but, unfortunately, that lesson will have to be taught at great risk and cost to the industry, because how can the individual manufacturer foretell to a week when the present limited market shall be overstocked and the real wide market of supplying medical men and others with cars at practical costs shall alone remain?

AMERICAN METHODS NOT YET PRACTICAL HERE.

One other point in dealing with this extraordinary transition period as it affects motoring and the medical man. It may be asked, Why does not the British industry reproduce American factories and production schemes exactly? There are several answers, among which the following brief ones may suffice.

It is observable that under our taxation and labour conditions no American manufacturer has any intention of availing himself of any of the magnificent American style munition factories on the market to set up, at less cost than he could do in his own country, a complete plant for duplicating his enterprise in conjunction with British trade union labour. Of course, there are American car assemblers, and semi-manufacturers, in this country, who work with non-union labour, and who are, incidentally, charging the public 100 per cent. more for their 1919 products than they were for their 1914 vehicles.

Some of the most enterprising and successful firms in the British industry have conferred together to see whether the case could be met by pooling their factories and making cars on the unit system or parts-specialist scheme. Expert investigation reveals that it cannot be done, in part because of transport costs. Even so they have not given up the pursuit of the problem; on the contrary, they have gone into the matter in such detail as to discover that it would need a capital of over 3 millions to set to work in the only practical way, by establishing an entirely fresh and self-complete enterprise exactly reproducing all the essential features of the American scheme, and there would not be any prospect of a return on the capital for some three years, even if all went well with the enterprise. Would scores of thousands of the British public invest in British enterprise on such terms? Statistics founded on investigation of investors' lists of existing motor companies reveal that such numbers would be needed to support it. Though money could not be found that way, possibly it could be found by an aggregation of motor firms subscribing the necessary capital and guaranteeing out of their profits 5 or 6 per cent. interest for three years. But this is held to be impracticable because of the already proved attitude of labour in regard to the introduction of new processes of manufacture and new phases of design, and because it is beyond the power of the human mind to foretell accurately what will be the world condition in regard to motor-car production three years hence. The chances appear to be at least ninety-nine in a hundred that, instead of having a profitable business, it would be found that the motor industry of the world is hopelessly over-produced by then. Everybody who has studied the matter at all at first hand knows that over-production is a mere matter of time. For my part, I look for it to occur between twenty-four to thirty months from this date. In the meantime the medical man will realize than any number of practical minds are grappling with the problem of how to give him as speedily as possible what he needs in the matter of a car at the price he can afford to pay for it.

REPORT OF THE REGISTRAR-GENERAL FOR 1917.

THE report of the Registrar-General for the year 1917 follows the lines of its recent predecessors, and, both in matter and arrangement, maintains the superiority over other official collections of vital statistics which has for some time characterized the publications of Somerset House.

Births, Marriages, and Deaths.

The total civilian population of England and Wales in mid 1917 was estimated to be 14,085,300 males and 19,625,700 females. The populations at ages have been estimated by taking into account the numbers added to and withdrawn from each group, so far as that portion of the population is concerned the estimates for which in 1915 were founded upon the National Register count of that year. A combination of methods has been applied to the remainder of the population. Death-rates are based throughout upon civilian deaths and populations. A different population has been used for computing birth-rates, because married men in the services given occasional leave remain an effective element of the population so far as the birth-rate is concerned. The total population estimated for this purpose is 37,578,234, and the local civilian populations for birth-rate purposes have been obtained by increasing the estimate for death-rate purposes to the extent by which the birth-rate population of the whole country exceeds the civilian population.

The marriages numbered 258,855, giving the lowest rate yet recorded. The births numbered 668,346; 117,174 fewer than in 1916. In 1913 the crude birth-rate was 24.1 per 1,000, in 1914 23.8, in 1915 21.9, in 1916 20.9, and in 1917 17.8 Taking the average rate for the decennium 1871–80 as a standard, the 1917 figure is almost exactly 50 per cent. of the rate prevailing before the downward trend manifested itself.

The war has of course contributed powerfully to this decline; to what extent peace will contribute in restoring effective fertility remains to be seen.

In all, 486,965 civilian deaths were registered in 1917, corresponding to a rate of 14.4 per 1,000; corrected to the 1901 standard population, the standardized rate is 13.5. A lower rate has been recorded thrice—namely, in 1910, 1912, and 1916, but if allowance is made for the deterioration in physical quality of the existing civilian population of males—owing to military selection—there is reason to suppose that the rate in 1917 was, as an index of mortality, inferior to that of no other year. The standardized rate for females, which increased from 12.4 in 1914 to 13.2 in 1915, declined to 11.7 in 1916, and declined a little further, to 11.4, in 1917.

Child Mortality.

The most remarkable feature of the death-rates at ages is the very low mortality at ages 0–5 in both 1916 and 1917. When account is taken of the effect of the declining birth-rate in diminishing the proportion of exposed to risk at the earliest and most dangerous age, the rate for 1917 is found

slightly to exceed that of 1916, but both years still compare very favourably with any previous year. Mortality during the first year of life is examined in considerable detail by Dr. Stevenson. The conventional measure—namely, deaths under one year in proportion to births for the year—is unfavourable to 1917 in comparison with 1916, the per mille rates being 96 and 91 respectively; but the value of this measure is greatly impaired by the heavy fall in the birth-rate, and Dr. Stevenson provides other indices of mortality. A very simple and apparently satisfactory plan is based upon the experience of normal times that some 70 per cent. of the deaths of infants in any year are those of children born in that year, the remaining 30 per cent. being furnished by the births of the previous year. If the infant deaths of 1917 are divided by the sum of 30 per cent. of the 1916 births and 70 per cent. of the 1917 births, a similar course being taken with the deaths of 1916, the per mille rates are 91.7 for 1917 and 90.2 for 1916, the relation between the two averages being generally confirmed by other methods of statement; the general position in 1916 and 1917 has been decidedly favourable.

The returns for 1917 have for the first time been analysed so as to show the mortality of infancy by age and cause not only in the various classes of area, urban and rural, but in four sections of the country in each class of area.

Infant mortality is found to vary with geographical position to an extent not very much less than its well known variations with urbanization. For the whole twelve months of life the range is from 93 per cent. of the average in the Midlands to 112 per cent. in the North, as against a range from 85 in the rural districts to 111 in the county boroughs. The geographical variation is not so much affected by age as is that associated with type of area. In the first four weeks of life the range with variation of administrative type is only 5 per cent., but at age 9–12 months the rural districts have only 66 per cent. of the average mortality, the county boroughs 117 per cent. At this age the excess is as much as 33 per cent. in London. If one compares the same administrative units in different geographical situations, this increasing differentiation with age, if distinct, is not so great; thus, taking the county boroughs, the difference between the best and worst is 22 per cent. of the general average for the age group 0–4 weeks, 28 at age 4 weeks to 3 months, 34 at 6–9 months, 46 at 9–12 months. In each of the last cited examples the worst is the North and the best the South. If we may presume that the adverse influence of urbanization is at its maximum in London, such influence tells but little at first; with advancing age, however, it rapidly overcomes the advantages of London's southern position.

Dr. Stevenson follows the trail further and contrasts the mortalities for the first day of life, the first week, and the second and third weeks. He observes:

> The table shows that the advantage of the South over the North is quite marked from the first day of life in all classes of area, the Midlands occupying an intermediate position in almost every instance. This is entirely in accord with the comparison of the mortalities of these areas at other ages and from most causes. The very first day of life produces the greatest departure shown in the table from the average for the whole country. This is found in the case of the rural districts of the North, where there is an excess of 27 per cent. A defective midwifery service at once suggests itself as the probable explanation, and this is supported by the general excess mortality of the rural districts in all sections of the country on the first day. It is only on this first day of life and in the rural districts that the mortality of the South is ever as high as that of the country at large, its advantage in other cases varying from 4 to 27 per cent.

The northern districts show an excess of mortality attributed to premature birth, and it is tempting to set this down to the greater volume of industrially employed mothers in the North.

> This explanation, however, is not supported by the record of mortality from premature birth since the commencement of the war. The vastly increased industrial employment of women in 1916 and 1917, often upon work heavier than would be considered suitable for female labour in normal times, has been accompanied by no increase in mortality from premature birth. This rate, stated per 1,000 births, has been as follows in recent years: 1901–5, 20.2; 1906–10, 19.9; 1911–15, 19.7; 1916, 18.6; 1917, 19.1.

In congratulating ourselves upon the improvement in 1917 as compared with the last four years of peace, we shall do well to note Dr. Stevenson's caution, that of the whole decline, amounting to 13.04 per 1,000 births, 9.89 is "due to diarrhoea, mortality from which will almost certainly increase again in hotter summers. The decline under the heading of developmental and wasting diseases, accounting for most of the balance of improvement, is probably of greater significance, and it may be hoped that it will continue to increase."

Passing to the mortality at ages 1 to 5 years, the experience of 1917 was somewhat less favourable than that of 1916, but much better than that of 1911–14.

> Of the total fall of 1.66 per 1,000 in crude mortality as compared with 1911–14, no less than 1.36 is attributable to three infective diseases—diarrhoea, whooping-cough, and scarlet fever. As the number of deaths from these causes fluctuates so much from year to year the prospects of steadily maintaining the ground won are probably less than if the improvement had occurred elsewhere. In 1916 similarly 80 per cent. of the still greater improvement recorded in that year was due to measles and diarrhoea alone. The table, however, shows that about 40 per cent. of the total mortality at this time of life is due to diarrhoea and the acute specific diseases, and as these are probably the most preventable of the causes in the table it is very largely to them that we must look for permanent reduction below the level reached in 1911–14.

The differences in mortality during the second year of life exhibited by various administrative and geographical areas are similar in kind to but greater in magnitude than those apparent in the first year, the advantage enjoyed by the South being considerable.

Turning now to the other end of life, we find that the rate of mortality at ages over 75 has been considerably higher for both sexes in 1917 than before the war. Mortality at these ages rose to a high level in 1915, has since declined somewhat but remains above its pre-war level. All the causes distinguished, except cancer, contributed to the sudden rise of mortality in 1915, even "old age" showing a temporary increase in the proportion of deaths attributed to it. The prima facie inference is that the shock of war rendered the aged more vulnerable to disease in general. The war has of course provided evidence of a similar general lowering of resistance in persons at younger ages exposed to great mental strain under special conditions.

Causes of Death.

Passing to the nosological record, we find that for the first time less than 1,000 deaths (977) were attributed to enteric. Only three deaths were attributed to small-pox and in two of these the diagnosis was doubtful. Measles was responsible for 10,538 deaths, nearly double the number recorded in 1916, but still providing a mortality-rate somewhat below the average. The death-rate from scarlet fever was much the smallest yet found. Taking the rate per million on ages under 15 years as being unaffected by recruiting, the figures for each year from 1911 to 1917 (inclusive) are: 158, 167, 174, 231, 186, 110, 60. The average for 1901–5 was 366, and for 1906–10, 257. The mortality from whooping-cough was likewise favourable, the series of rates at ages under 15 from 1911 to 1917 (inclusive) being 703, 751, 488, 714, 717, 536, 399.

The mortality from tuberculosis amongst males was too much affected by transitory circumstances for it to be of value as an index of the normal trend. On the other hand, the female mortality is instructive. The rate in 1917 was 13 per cent. greater than in 1913, the serious increase being concentrated upon ages 5 to 25 at which it ranges from 21–42 per cent., the greatest increase at any other age being 9 per cent. In the report for 1916 Dr. Stevenson suggested that the rise might be due to factory conditions, and this point was examined in some detail by Captain Greenwood and Dr. Tebb in a report to the Medical Research Committee, which was summarized in our issue of March 15th. Dr. Stevenson still considers that the industrial factor may have been responsible for the chief part of the rise, that at ages 15–25, but he notes that this would not explain the increase of mortality at ages 5–15. He suggests that a change of diet, perhaps a deprivation of fats, may have played a part—a suggestion substantiated by the fact that the improvement in tuberculosis mortality in the age-group 0–5 is confined to the first two years of life, the 1917 rate being higher than the pre-war average for ages over 2.

> If diet has anything to do with the matter, it would presumably be children under 2 who would suffer last, the baby receiving his full fat ration in the form of milk, even if his elder brothers and sisters had to go somewhat short.

The death-rate from syphilis has risen, and Dr. Stevenson is inclined to think that the elevation is not a mere consequence of increased accuracy of certification.

In 1917 41,158 deaths were ascribed to cancer, furnishing the highest crude rates of mortality yet reached. Dr. Stevenson devotes several pages to the discussion of the problem whether the increase of cancer is a real increase

or only a reflexion of improved skill in diagnosis. The latter hypothesis was supported by the analysis of Frankfort data made in 1893 by King and Newsholme, and has since been discussed by numerous statisticians, including Hoffman and Willcox in America, Parkes, Greenwood, and Wood in England, Prinzing in Germany. Willcox has brought the Frankfort statistics used by Newsholme and King down to 1913, and the more recent data support the inference of the last-named authors as to the share of the increase borne by cancer of inaccessible sites for which improvement of diagnosis might be responsible. But the analysis provided by Dr. Stevenson of the much more numerous English data points to a very different conclusion.

> Taking the longer interval of nineteen years, 1897-98 to 1916-17, the growth of mortality from accessible cancer has been 56 per cent. amongst males, as against an increase of only 41 per cent. from inaccessible. This remarkable and quite unexpected result makes it very difficult to attribute so important a share in the recorded increase in the cancer of males to improved diagnosis as has hitherto seemed probable.

It appears to us that Dr. Stevenson's analysis almost amounts to a demonstration that a real increase of cancer has taken place, and such we should judge to be his own opinion, although objections and possible sources of fallacy are displayed with the scientific candour which we have long learned to expect in the publications of the Registrar-General's department.

The deaths attributable to alcoholism have decreased. Upon this Dr. Stevenson writes:

> It is impossible to avoid associating this sudden drop in mortality with the restrictions in the output of alcoholic liquors and of public-house hours brought about by the war, but it is advisable to bear in mind that many other changes have occurred since 1914, some of which might have a bearing upon the matter.

The deaths allocated to cerebro-spinal fever numbered 1,531 in 1917, as against 1,214 in 1916 and 1,974 in 1915. The highest numbers previously recorded were 194 in 1914 and 163 in 1913.

Altogether 39,832 persons died of some form of pneumonia. Outside of London, mortality decreased generally from North to South and the mortality also decreased with decreasing urbanization (being 1,400 per million for London, 1,358 for county boroughs, 1,017 for other urban districts, and 843 for rural districts). Both features are so regular from year to year that they may be accepted as defining the habitual type of distribution in this country.

We have now briefly summarized the more important results contained in the official analysis of our vital statistics during 1917, and we think an especially heavy debt of thanks is owing to Sir Bernard Mallett, Dr. Stevenson, and their depleted staff for the admirable manner in which the report is drawn up, despite the difficulties of the time. It is plain that the results here communicated suggest many promising and important lines of investigation which might well engage the attention of the new Ministry of Health.

THE present arrangement whereby the cost of the campaign against venereal disease in Norway is largely defrayed by the local authorities has proved unsatisfactory. It is objected that an unfair share of the burden is thrown on large centres, such as Christiania, to which patients are drafted for treatment from other districts. Certain local authorities have shown greater zeal in palming off their "undesirables" on to other bodies than in providing for treatment at home. These tactics lead to circumlocution and a game of shuttlecock, in which not only the patient suffers but the spread of the disease is facilitated. For this and other reasons a committee has been appointed, consisting of three medical experts and two laymen, to inquire whether the administrative schemes should be transferred from the local to the central authority. This committee will also consider the proposal that all the expenses connected with the treatment of venereal disease shall be defrayed by the state, irrespective of the patient's means. Hitherto the local authorities have borne only a portion of the cost of treatment. The problems connected with compulsory treatment will also be investigated by this committee, whose recommendations, it is anticipated, will inspire, if they do not actually determine, the character of the impending venereal disease legislation in Norway.

VITAMINES.

THE word "vitamine" is not as old as the present century, and however objectionable it may be in itself, it seems to have obtained a permanent footing in medical literature. It is certainly less cumbersome than the expression "accessory food factor" which has been suggested as a substitute. The actual word employed is after all of small moment; the important point is what it connotes. It is a matter of everyday physiological knowledge that our bodies are built out of proteins, fats, carbohydrates, salts and water, and that these substances must be taken in certain proportions and in sufficient quantity to repair the body waste, and furnish the energy necessary for its activities. But recent research has shown that these substances alone are incapable of maintaining life. Something else is required, the chemical nature of which is at present unknown, and it is to these unknown but indispensable accessory substances that the term vitamine has been applied.

Professor F. G. Hopkins of Cambridge, a pioneer in this branch of research, has suggested a useful simile to help us to understand the problem. He compares the building of the body to the building of a house; the essential bricks or blocks of stone of which the walls of the house are composed would be of comparatively little use unless mortar or cement was also supplied to unite these components together, and it is the cementing material which he compares to the vitamines. It would be dangerous to press the analogy too far for the exact rôle of the vitamines is still hidden from us, but the simile is a useful one to indicate one way at least in which they can render the important building stones of real service, and it is accurate in a quantitative sense. The mortar in the walls of a house makes up but a small proportion of the structure; it is exactly the same in the case of the vitamines—they bear but a small proportion to the total food supply. When they are withheld from the food, as when chemically pure proteins, fats, carbohydrates, salts and water are administered, health deteriorates, in young animals growth ceases, and, if the treatment is continued, death is the inevitable result. Health can be at once re-established if the diet is amplified by adding to it a natural food, such as a small amount of milk, for foods as they occur in nature contain the accessory factors necessary for growth and maintenance. The foregoing statements are commonplaces to the modern physiologist, but to the practising medical man they may be new, and I trust to show they are important practically. So many are the treated, purified, and sophisticated foods at present on the market, that it is most important to the dietician to remember that these are but poor substitutes for the foods which are made in nature's laboratory.

Although biochemists have not yet got so far as to be able to state what is the chemical structure of these vitamines, research has, at any rate, progressed far enough to make it certain that they are numerous, and it is around three of them that research has mainly centred. They are products of the plant world, and it is on plants that all animals ultimately live. Animals have greater synthetic powers than was formerly believed to be the case, but, so far as is at present known, they are not able to synthesize or manufacture vitamines. The vitamines can be separated by their varying solubilities in water and other agents, they can be distinguished by their varying powers of resistance to heat and other drastic

agencies, and, further, they are differently distributed in various parts of the vegetable world.

Their absence prevents healthy growth and leads to death, but the symptoms manifested are different in the three cases. The diseases due to their absence are very conveniently grouped together as "deficiency diseases." Among such diseases are beri-beri, pellagra, and, coming nearer home, scurvy and rickets.

The first of these vitamines is contained in the embryo or "germ" of cereal seeds. When milling is carried to a high degree this portion of the grain is removed, hence polished rice and superfine white wheat flour, though they may appeal to the aesthetic sense, are of inferior value as foods. It is now firmly established that beri-beri, the disease of the rice-eating nations, is due to the use of polished rice, and can be prevented or cured by adding the polishings to the diet. Polished rice produces the disease not because it contains a poison, but because it lacks the vitamine. Using the non-committal nomenclature introduced by American physiologists, it is now usual to speak of this vitamine, on account of its solubility in water, as "water-soluble B."

The second is contained in the majority of animal fats (lard is an exception), and is particularly abundant in milk fat, and in certain fish oils such as cod-liver oil. It is specially important as a growth factor, and therefore indispensable in early life. It is absent in vegetable fats. Here we have one more indication of the value of milk for the young, an explanation of the potency of cod-liver oil in curing malnutrition, and a warning of the danger of vegetable margarines if employed as the only source of fat in the food of the growing section of the population, or of expectant mothers. It is usual to dub this vitamine "fat-soluble A." There is accumulating evidence to show that its absence or deficiency is an etiological factor in rickets. Like its water-soluble companion, it is ultimately a vegetable product, and is contained in high concentration in the green portions of plants.

The third vitamine is also soluble in water, and, as Dr. Drummond suggests, it may be called "water-soluble C." This is the antiscorbutic principle, and is found in the juices of fruits (the orange and lemon are here pre-eminent) and in most edible vegetables. It is characterized by its extreme lability, being destroyed by moderately high temperatures, treatment with alkali, by desiccation, canning processes, and the like. Hence arises the value of fresh fruit and vegetables in the prevention of scurvy.

The object of this article, however, is not so much to indicate to the practitioner the elementary principles of our knowledge of the vitamines—that could be accomplished by the perusal of any recent book on physiology or scientific dietetics—but to go a little further, as a result of reflection and study of the subject. An appreciation of the main fundamentals is, however, necessary to realize that the subject is one of the highest importance and has bearings beyond those I have up to this point briefly summarized. It is perhaps not going too far to state that the conception underlying it bids fair to have as far-reaching results as those which have followed a study of internal secretions, and all that another modern word ("hormone") has been instrumental in introducing into medical minds.

To label a disease by a specific name, beri-beri, rickets, etc., and to fathom its cause, and lead us to a rational and successful treatment of the same is no mean accomplishment, but what about those more numerous ailments to which it is impossible to give a name, so vague and puzzling are the symptoms they exhibit. May it not be that many so-called minor conditions of malnutrition may be due to lack of vitamines, or to a deficiency in their supply? Although at present three vitamines have been brought into the light of investigation, who can say that the list is complete? It is more than probable that obscure and apparently trivial complaints may in the future also be found to be deficiency diseases. An obvious state of malnutrition in the infant may pass away, and yet it may leave its mark behind it and cause far-reaching results later in life. Take, for example, that curse of modern days—dental caries. Already, as Mrs. Mellanby has shown, there are signs that this is just such a condition, and that its cause is probably a deficiency (earlier in life) of a vitamine not very different from "fat-soluble A."

The subject is still in its infancy; we know a few main facts. How vast is our ignorance; how vast also would be our power to benefit humanity were this ignorance to be dispelled. Happily many workers are taking up the subject and exploring the numerous by-paths that the main idea has opened up. The most important work of this nature recently brought before the medical profession is that by Lieut.-Colonel R. McCarrison, already well known for his fruitful work on the thyroid gland. His paper is entitled "The pathogenesis of deficiency disease," and appears in the current volume of the *Indian Journal of Medical Research* (January, 1919, vol. vi, pp. 275–355). A brief summary of his main conclusions was published in the BRITISH MEDICAL JOURNAL, February 15th, 1919, p. 177 et seq. I have read the full paper, and, considering the difficulties of research in an Indian provincial institute, regard it as a monument, not only to the enthusiasm, but also to the ability of one endowed with the capacity for real research work. The disease in particular he at present has dealt with is beri-beri; this complaint can be produced easily in birds by withholding water-soluble B, or, in other words, by feeding upon highly milled cereal grains. So far the nervous symptoms of this disease—spoken of as neuritic—have attracted most attention, so much so that the term "antineuritic vitamine" has been used as a synonym for water-soluble B. But McCarrison has shown that the condition is more than a functional and degenerative condition of the nervous system—that it is one in which practically every organ and tissue of the body is involved. The organs of digestion and assimilation are particularly affected, and thus many of the symptoms owe their existence to the chronic inanition so produced. The lowered vitality then renders the body an easy prey to infectious and parasitic agents, and thus other symptoms become explicable. Among the many remarkable results chronicled is the one that while the adrenals hypertrophy, there are other organs which atrophy, and in order of severity these are the thymus, the testes, spleen, ovary, pancreas, heart, liver, kidneys, stomach, thyroid, and the brain least.

It therefore appears that the organs which atrophy provide a reserve of vitamine for use in periods of stress; the reserve, however, is soon exhausted. But seeing that this JOURNAL has so recently published a list of the author's conclusions, it would be a work of supererogation for me to recapitulate them. One can only hope that sufficient has been said to induce those interested to read the paper, which contains the evidence in full. One also trusts that Lieut.-Colonel McCarrison will continue this useful and epoch-marking work, and that others will also ply their spades in this fruitful field.

W. D. HALLIBURTON, M.D., F.R.S.

British Medical Journal.

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THE TRANSITION BUDGET.

THOSE enterprising persons who annually indulge in "intelligent anticipation" of the Budget had an easier task than usual this year, for with the recently appointed Royal Commission on the Income Tax not yet in active operation, it was not to be supposed that any substantial alteration in that tax would form part of the Chancellor's proposals for this year's finance, and a substantial reduction in the rate of the excess profits duty was generally anticipated, partly on account of the grave economic effects of that duty on individual effort and on the accretion of capital, and partly because a continuance of a high rate of duty would be unprofitable to the Exchequer in those cases in which a failure to maintain the pre-war standard of profit in "demobilization" conditions would give rise to a claim for a refund of excess profits duty paid during the war. Although there are no surprises in the Budget, it is none the less of vital concern to the taxpayers, and more especially to that growing section who study with real interest the steps which the nation is taking to put in order the finances—both income and expenditure—so that the already urgent and difficult problems of resettlement can be faced and worked out to their best solutions, unhindered by anxieties as to whether the annual charges resulting from the war can be met without so great a dead-weight of taxation as to preclude expenditure necessary for raising the physical and social health of the community. A transition budget has this mark of importance, that the method and magnitude of the transit must have a not inconsiderable effect on the ultimate goal.

The point in the Chancellor's speech which is of most direct interest to the medical profession is that dealing with the motor spirit duties. He admitted that that duty, involving as it did a discrimination not according to the nature of the article but according to the purpose to which it was put, was complicated and expensive to administer, and gave a wide opportunity for fraud and evasion. Evidently he hopes next year to abolish the duty altogether in substitution for a charge on the users of cars levied in some other form, and in the meantime has undertaken the abolition of the motor spirit licence duty collected by the Petrol Control Committee of the Board of Trade, and the exemption of benzol from taxation. This will be of some benefit to practitioners generally, and we assume that whatever form the new motor duties may take next year the claims of the medical profession to special treatment will not be overlooked.

The interest of the general public naturally centres chiefly in the imperial preference proposals, and is heightened by the striking coincidence which brings Mr. Austen Chamberlain forward from the Treasury Bench to introduce the first legislation on the lines of the proposals with which his father's name is so inseparably connected. Naturally there has been a good deal of, sometimes vehement, reference to the thin end of the wedge, but most men will take the moderate view, and, while gladly accepting the present proposals, and, indeed, hoping for further action along the same line, will consider such matters as may be brought forward for "preferential" treatment on their own merits and not merely as a means to complete Free Trade on the one hand or a watertight tariff wall on the other. In the meantime the Dominions which have stood by the Mother Country in her hour of trial are to receive such encouragement and help in their trade as can be given by way of a reduction in our existing import duties, and a beginning will thus be made in putting to the test of actual practice the principles for which one of England's great political leaders resigned his office and fought so strenuously. The great experiment is fairly launched and colonial business acumen and energy may be trusted to see that it achieves success. The list of articles on which a preference is to be given is not lengthy, but would have been shorter still had it not been for the special duties on cinema films, clocks, motor cars, etc., levied since the outbreak of war. The preference may be stated in general terms to amount to one-sixth on such raw materials, and one-third on such manufactured goods, as are already subject to customs duties; the former may confidently be expected to give a stimulus to the production within the British commonwealth of such commodities as tea, sugar, tobacco, and cocoa, already largely grown in India and the Colonies, which will no doubt be grown on a still larger scale in view of the future more favourable conditions in the home markets; and the latter preference will assist the Colonies in nourishing their "infant industries," and incidentally save this country from the danger of any sustained attempt at Continental "dumping" in the future.

The increased duty on spirits will inevitably give rise to more or less strenuous protest, but the high profits made by the manufacturers of and wholesale dealers in whisky have been common knowledge for some time, and the Chancellor may rely on receiving an abundance of popular support in his action, directed as it is to the extraction of an increased Excise revenue from a notoriously prosperous trade at the moment when the 80 per cent. excess profits duty is to be halved, and that check to profiteering correspondingly weakened.

The Chancellor spoke his mind freely and with conviction on the proposals of the Labour party to institute a levy on capital, and has, we are glad to see, the almost unanimous support of the public press. At the same time, he went some way towards disarming his critics by a very substantial stiffening of the death duties on large estates. One effect of this will no doubt be to increase dispositions of property *inter vivos*, but from some standpoints such an effect is not altogether to be deprecated.

We have already suggested that this Budget is not one of specific interest to the medical profession, but we have a qualification to add. The simple and really obvious fact, that given a certain amount of taxation to be raised a relief to one section of the community necessarily implies a burden on another, is too often overlooked. The basis of calculation of the different Chancellors during the war has been that the revenue to be raised for any year must never be less than the probable normal peace expenditure will require. It is on this basis that Mr. Austen Chamberlain has framed his proposals, and has been able to provide substantial remissions of existing taxes. It is in no grudging spirit, but with every desire to present the position fully and clearly, that we venture to point out that the outstanding concession contained in the Budget—that under which the rate of excess profits duty is reduced as from January 1st, 1919, from 80 per cent. to 40 per

cent.—affects the mercantile and manufacturing portions of the community only, and that substantially the burden of the professional classes is unrelieved. We trust that next year, when the report of the Royal Commission on Income Tax is available, the Chancellor will bear in mind the claims of those who have to pay a tax, so widely diffused, to a substantial reduction from its present very high level.

THE AFTER-EFFECTS OF GAS POISONING.

There is, happily, growing reason to think that only a very small percentage of the surviving gas casualties of the war will suffer from any permanent disability. A large number of the sequelae of all types of poison gassing are functional in character—such, for instance, as the so-called D.A.H., tachycardia, dyspnoea and pain in the chest on exertion, spasmodic cough, and vomiting. For these conditions lapse of time, cessation of hostilities, and, if necessary, treatment by graduated exercises and other appropriate measures, will almost certainly effect a complete cure. Certain organic lesions will, however, remain. Following the action of lung irritants—as we prefer to call what French observers style the asphyxiating gases—the most prominent lesions are chronic bronchitis, bronchiectasis, and pronounced emphysema. A prolonged polycythaemia is also seen, associated with the disturbance in the pulmonary vascular bed that follows the capillary thrombosis in the acute stages, and evidenced by nocturnal asthma and night terrors. For this condition the treatment—still in the experimental stage—which consists in keeping the patient in a highly oxygenated atmosphere for five days, promises relief. Mustard gas also will leave some of its victims permanently damaged; for a substance which acts as a chemical irritant will, if in sufficient concentration, destroy tissues, whether the eye, the skin, or the respiratory tract. In greater dilution the after-effects of mustard gas are mainly to be found in the lungs, where a purulent bronchiolitis or bronchopneumonia has been set up. Hence will result chronic bronchitis, bronchiectasis, and pulmonary fibrosis of varying extent.

There is no body of evidence to indicate that gassing has set up a predisposition to disease other than tubercle, which is more probably rekindled than caused. Effects on the kidneys are rare. Where a condition of asphyxia has been prolonged the kidney may suffer from pressure effects, but there is no proof of direct action of any gas on the renal tissue. As rarities may be mentioned the occurrence of peripheral thrombosis, following both mustard gas and lung irritant, and an occasional condition of psychasthenia aggravated by gas poison.

It would appear from a communication to the Académie de Médecine by Dr. Charles Achard, on the sequelae of gas poisoning,[1] that British experience in this matter is on the whole borne out by that of French observers. This paper is based on the observation of 3,525 cases during a period of twenty-three months. The author found that mustard gas was the cause of the largest number of sequelae, although the more serious lesions were most commonly due to "asphyxiating gas." Respiratory complications were by far the most important. Some cases presented relatively slight functional disturbances, such as cough, dyspnoea, and asthmatic attacks, while in others these symptoms were accompanied by physical signs. The respiratory exchange was sometimes found to be considerably diminished, especially after the action of asphyxiating gas, owing to persistent interference with respiration, due, as is now shown by experiments on animals, to late pulmonary lesions. The physical signs observed were those of emphysema or chronic bronchitis; sometimes they were confined to the apex. These symptoms, especially after asphyxiating gas, might last long—in some cases two to three years. The most interesting, the bronchitic type, simulated tuberculosis by the occurrence of slight haemoptysis, physical signs at the apex, occasionally pronounced emaciation, and an evening rise of temperature. As a rule, however, no sign of tuberculous lesions was revealed by x rays or examination of the sputum; in course of time, varying from a few months to more than a year, the fever and other symptoms disappeared. In some cases, but much more rarely than was at first supposed, tuberculosis occurred as a secondary complication a long time after acute symptoms of gas poisoning had subsided; usually it was due to the recrudescence of previous latent lesions.

Dr. Achard notes that various digestive disturbances may persist after gas poisoning. Some patients showed a marked intolerance for meat, eggs, or wine, and others suffered from hyperacidity or from chronic enteritis. In a number of cases, however, symptoms of this kind were found on inquiry to be due to errors in diet and alcoholism. Cardiac symptoms, such as palpitation, shortness of breath on exertion, tachycardia, and a delayed return to the normal cardiac rhythm after muscular effort, might persist for long. The liver and kidneys were, as a rule, only very slightly damaged by acute gas poisoning, and were hardly ever the seat of persistent after-effects.

The outlook for these cases would, therefore, in general appear to be more hopeful than was at one time feared.

[1] *Bull. de l'Acad. Méd.*, 3me sér., lxxxi, 135

A CONFERENCE OF MEDICAL BODIES.

The Council of the British Medical Association on April 16th, acting upon a suggestion made to it by the Association of Panel Committees, decided to call a conference of representatives of various medical bodies, with a view to securing common action in medico-political affairs. Invitations were accordingly sent to the Association of Panel Committees, the Medico-Political Union, the Medical Parliamentary Committee, the Medical Women's Federation, the National Medical Union, and the State Medical Service Association. A conference was held at 429, Strand, on May 6th, with Dr. T. W. H. Garstang in the chair, and, after a discussion which it is hoped will prove profitable, was adjourned to an early date. An agreed report of the proceedings will be published.

LIQUOR CONTROL.

It will be admitted on all hands that the position with regard to the manufacture and sale of alcoholic beverages in this country requires attention. The present restrictions have only temporary sanction. The regulations limit the number of hours during which alcoholic beverages may be sold, diminish their strength, and increase their price. The general tendency of the regulations was no doubt toward diminishing consumption, and so preventing the conversion of cereals required for food into beverages which have little or no food value. The regulations with regard to the number of hours during which sale is permitted were, however, imposed mainly in order to check drunkenness. It has not been established that the other two have any effect in this direction, though the revenue received by the state has been increased and also the profits of brewers and distillers. We believe that there is a considerable body of public opinion in favour of

maintaining the restrictions as to the hours of sale, the reduction of the number of licences issued, and the encouragement of the principle of establishing food taverns, which, as Dr. Barnes explained in the JOURNAL of April 19th, p. 487, has been successful in Carlisle and its neighbourhood, where the chief experiment of the Central Control Board (Liquor Traffic) has been carried out. Lord D'Abernon, the chairman of the board, who wrote a preface for the first edition of Mr. Carter's book on *The Control of the Drink Trade in Britain*,[1] has now written a postscript for the second edition, published this week. In it he says that the experience of the last eighteen months enables him to speak somewhat more confidently of the immense possibilities of an improved level of temperance under a system of reasonable and scientific control. The vital and essential question is, he says, Can alcohol be controlled or not? The United States have answered the question in the negative, affirming that nothing is of value but total prohibition, and the greater part of Canada appears to take the same view. Lord D'Abernon does not accept it for this country; he believes that control can effect all that is required, and would possibly give more than would be gained under prohibition. He admits the issue to be doubtful, depending upon the good sense of the public and the wisdom of Parliament. Did the choice lie between prohibition and a relapse to pre-war conditions he would be prepared to support prohibition at any cost. But he holds that it is no longer doubtful that under an appropriate system of restriction a high level of temperance can be attained in this country, and thus national efficiency enhanced and general prosperity and happiness increased. In order to attain these ends the regulations must be both restrictive and constructive, and must involve a certain constraint upon those who require no protection against themselves as well as upon those who do. But public opinion must be convinced of the necessity of restriction, and Parliament must act upon this public opinion. "There can," he says, "be no question of the prolongation of the powers which were given to existing authorities for the period of the war. In order that the modifications and adjustments which may be necessary to suit the conditions of peace may be properly effected, a new departure will have to be made, a new commission issued. But to a large extent recent experience must and should govern future conduct." So far as we are able to judge, the medical profession as a whole is not convinced of the necessity for total prohibition, but would, by a large majority, agree with the chairman of the board, in advising restrictions of the nature already indicated—namely, a reduction of the number of licensed houses and greater limitation of the hours of sale than existed before the war—and would approve any measures tending to make licensed houses places to which people resorted primarily for food, and not for mere drinking at stand-up bars.

MEDICAL BOARDING FOR PENSIONS.

THE opening proceedings of the Select Committee on Soldiers' and Sailors' Pensions, over which Sir Montague Barlow presided, are reported at p. 590, and it will be seen that Sir Albert Flynn, formerly of the War Office but now acting secretary of the Ministry of Pensions, gave evidence which seemed to imply serious reflections on the competence of certain medical boards. The evidence given by this official was preliminary, and, perhaps on this account, failed to give a correct impression of what actually happens. We have no doubt that before the inquiry has gone much further evidence will be given on the whole matter of the examination by medical boards of discharged invalided men and the translation of the recommendation of these boards into monetary awards. Medical boards fall into two main classes—those which examine men for the first award, and re-examining boards. The first medical boards, which examine men on discharge from the service, report upon attributability—that is to say, whether a man is entitled to a pension or gratuity—and assess the degree of disablement. The boards for the purpose of these first awards are the boards at military hospitals composed of military medical officers; boards at naval hospitals composed of naval medical officers; boards at discharge centres composed of a civilian chairman, one civilian member (both under the Ministry of Pensions), and one military member; and dispersal hospital boards, which are military boards with one civilian member representing the Ministry of Pensions. All first awards are made as the result of examination by one or other of these boards, except in the case of men suffering from war neuroses who come before a special medical board of the Ministry of Pensions. Exception is also made in the case of men claiming under the "Z" scheme. The medical re-examining boards are concerned primarily with the periodic reassessment of the degree of disablement and consider questions of attributability only if they arise in connexion with disabilities other than those recorded in the discharge documents as existing on discharge and in respect of which a pension was granted. All the re-examining boards with the exception of those for war neuroses consist of civilians—that is, one civilian whole-time official of the Ministry of Pensions as chairman, and two part-time civilian members selected from a list of medical practitioners, one of whom is frequently a specialist. The findings and recommendations of the boards are intended to apply for as long as the circumstances at the time of examination permit. If a man is at a military hospital and is there discharged from the army by the medical board the whole of the discharge documents are prepared by that board. In such a case the man leaves with coupons for four weeks' full pension and his papers are usually sufficiently complete to enable the award of a temporary pension for the following six or twelve months without examination. To provide for immediate necessities which may arise prior to boarding in the case of claimants to pensions after demobilization or between successive boards, medical referees of the Ministry of Pensions may examine the claimants or pensioners, and furnish certificates which are an authority to local war pensions committees to make monetary advances, or order medical treatment, or take both courses. Another class of case is composed of men who claim a pension at a later stage after discharge, and who come into touch with the pensions machinery by applying to the local war pensions committee, claiming to be suffering from incapacity due to injury or disease contracted in the service.

[1] *The Control of the Drink Trade in Britain*: A Contribution to National Efficiency during the Great War 1915–18. By Henry Carter. London: Longmans, Green, and Co. 1919. (Demy 8vo, pp. xix + 343; illustrated. 4s. 6d.)

THE ROYAL ACADEMY.

THE Royal Academy exhibition this year, which was opened to the public on Monday, presents the usual medley of good, bad, and indifferent pictures. The good are far between, and there are few, if any, that can be described as works of genius. No artist of repute has added much to his reputation, save perhaps in the main sculpture gallery, where Captain Derwent Wood (whose services to plastic facial surgery during the war are well known) has two noteworthy busts and a large bronze statue of a nude figure conceived and executed in the grand manner. In a corner of the same gallery may be seen a sympathetic head of the mother of two R.A.M.C. officers, modelled by her daughter. There are many khaki portraits and topical war pictures, and most of them are very poor; but British pictorial art as a whole is always better than might be supposed after a visit to the R.A. exhibition, which frankly makes a popular appeal and asks only of the unknown artist that he should conform to the academic convention. In recent years the sky-line picture has been abolished, and with it has gone much of the

"academy headache." Among the large oil paintings in Gallery V there is a full-dress portrait of Lieut.-General Sir Alfred Keogh, by Arthur Hacker; a memorial picture of the late Dr. David Little, operating for cataract; and a cheap sensation labelled "Cocaine." Elsewhere there is a life-like representation in oils, by A. T. Nowell, of Dr. Edwin Rayner, late treasurer of the British Medical Association, and a portrait of Colonel Atwood Thorne, late officer commanding the 4th London General Hospital. Among the water-colours will be found a portrait of Dr. Theo. B. Hyslop, surmounted by a pleasing study of the interior of an old apothecary's shop by Lucy Pierce, whose talent in showing the still life possibilities of druggists' bottles appears also in a picture called "Empties." The black and white room contains a good engraving, by H. Macbeth-Raeburn, of Fiddes Watt's portrait of Lord Finlay (who is an Edinburgh graduate in medicine), and a drawing of Prospect Hill, Peking, by Major W. Perceval Yetts, who, so far as we know, is the only exhibitor belonging to the medical profession. There are several fine paintings by Sargent, including the great mural decoration "Gassed," which has been lent by the Imperial War Museum. Beyond this, the medical side of war does not form the subject of any important work, except perhaps Lavery's sketch of the ball-room of Londonderry House as a hospital ward.

A NOBLE ITALIAN DOCTOR.

Through the courtesy of Dr. Barber of Sandown we have been allowed to see a touching tribute to a captain in the Italian medical service, written by an ex-private of the British army, who was a wounded prisoner of war at Stendal, in Germany. The writer was ten months in captivity; during the first month he was an inmate of five German hospitals; the rest of the time was spent in the lazarette of Stendal camp. Dr. Giuseppe del Vastor, he says, will be gratefully remembered by thousands of Englishmen, and by as many repatriated prisoners of other allied nationalities. "Thanks to the magnificent example and devoted attention of this doctor, my life was probably spared me; and thanks again to his strong will and personality, which prevailed even over the German doctors who were in charge, our life there was made, to say the least, tolerable by this remarkable man. During my time there I had every opportunity to see, under the fearful conditions, and the want of ordinary materials which were so vitally necessary, what a terrible task this man had to carry on his work; and although he carried through hundreds of operations of every description with his own hands, and in every case without an anaesthetic, the results, if only the men could be collected to speak for themselves, would I know be astounding." The writer, after praising Dr. del Vastor's wonderful skill, patience, and devotion, adds, "He incessantly worked all day, and sometimes very nearly all night." This modest document has the ring of truth, and we gladly comply with the request of our correspondent that the profession in this country may be made aware of the devotion and goodness shown by an Italian *confrère* towards helpless British prisoners.

THE ANNUAL REPRESENTATIVE MEETING.

As already announced in the Supplement, the Annual Representative Meeting of the British Medical Association will be held in London this year, beginning on Thursday, July 24th. The Annual Report of the Council for 1918–19 was printed in full in last week's Supplement. It is within the discretion of each constituency to decide whether the election of its representative, or representatives, shall be carried out by a general meeting of the constituency, or by postal vote; but the election must take place not later than June 24th. The provisional agenda for the Annual Representative Meeting is published in this week's Supplement; it includes only such items as are known to require the consideration of the Divisions. Notice of motion by Divisions, constituencies, or Branches for the consideration of the Representative Meeting, proposing to make any addition to, any amendment, alteration, or repeal of, any regulation or by-law; or to make any regulation or by-law; or proposing material alteration in the policy of the Association, must be published in the Journal not later than May 24th, and for this purpose should be received by the Medical Secretary not later than May 20th. The Annual Conference of honorary secretaries of Divisions and Branches will be held this year on Wednesday, July 23rd. The Annual General Meeting of the Association will be held at the Connaught Rooms, London, on Friday, July 25th, at 2 p.m.

Lieut.-Colonel Sir Walter Buchanan, K.C.I.E., is retiring from the Indian Medical Service and vacating the appointment of Inspector-General of Prisons, Bengal Presidency, which he has occupied for seventeen years. He is succeeded in the office of editor of the *Indian Medical Gazette*, which he has held for twenty years, by Lieut.-Colonel D. McCay, I.M.S., professor of medicine in the Medical College, Calcutta.

The Oliver-Sharpey lectures before the Royal College of Physicians of London will be given by Professor E. H. Starling, C.M.G., F.R.S., on June 3rd and 5th, his subject being the feeding of nations—a study in applied physiology. The Croonian lectures, on the significance of the cerebral cortex, will be given by Professor G. Elliot-Smith, F.R.S., on June 12th, 17th, 19th, and 24th. The lectures will be given at the College at 5 p.m. on each day.

Medical Notes in Parliament.

Ministry of Health Bill.

Second Reading Debate in the House of Lords.

In the House of Lords, on May 1st, Viscount Sandhurst, on behalf of the Government, moved the second reading of the Ministry of Health Bill. Dealing with the proposal to place the Medical Research Committee under the Privy Council, he said that that Committee would have the widest possible field; the Health Ministry would continue, as the successor of the Local Government Board, to have its own staff for medical research, to do work as necessity demanded or opportunity suggested. Other departments would work in the same way with the Research Committee to advise or assist. The object was that research should not be cramped nor confined within one department. Coming to the proposal for setting up consultative councils, Viscount Sandhurst stated more fully than did Dr. Addison in Standing Committee of the House of Commons what these councils would be. There would, he said, be a medical consultative council of men and women, with a subcommittee, not limited as to personnel to the parent consultative council, for ancillary services, such as nursing and midwifery; there might be a consultative council for local administration, composed of experienced people recommended to the Minister—for example, by county councils or associations of county councils, municipal corporations, or urban and rural associations. There would be a council for insurance, of people experienced in these matters, such as now formed the Insurance Advisory Committee, and a general consultative council, somewhat on the lines of what was known as the Consumers' Council at the Food Ministry. The Minister would be in the closest touch with the consultative councils. Each would have its subcommittees, composed like the medical subcommittee of members not necessarily belonging to the personnel of the parent council. A consultative council would have a right to offer the Ministry advice, and the Minister would be under obligation to receive and consider it. With regard to procedure as to the issue of Orders in Council, he said that one Order would fix the date for the coming into operation of the Act. The consultative council would be established by Order in Council, which would be

laid on the table of both Houses of Parliament for thirty parliamentary days. If an Order in Council was to provide either for an increase or a decrease in the duties or powers of the Minister it would require a resolution of approval by both Houses of Parliament. The Order, however, could be amended by either House.

The Marquis of Crewe, in congratulating the Government upon having produced a most useful and practical measure, expressed the opinion that it had taken the right course in placing medical research under the Privy Council, and not under the Ministry of Health. Medical research must in many instances be closely connected with research in chemistry and physics, and to remove medical research in particular from the general care of the Privy Council, which was the home of the Department of Scientific and Industrial Research, would be a blunder. He thought there was a danger that the consultative council might to some extent detract from the responsibility of the Minister, and asked whether the members of the Council would be at liberty to express in public views divergent from those of the Ministry, or whether, when once a conclusion had been reached, they would be bound to hold their tongues on the subject for ever afterwards. If their scope was the more limited kind, he could quite understand that they would serve a very useful purpose.

The debate was continued by Lord Downham, who, as Mr. Hayes Fisher, was for several years Parliamentary Secretary, and afterwards President, of the Local Government Board. The bill, he said, would bring great disappointment unless it were followed by a new public health policy, by a new and improved Poor Law, and by a very large increase in hospitals, sanatoriums, and clinics, in the number of well-educated and re-educated medical practitioners, and in the number of nurses. Since the establishment of the Local Government Board in 1871 the population of England and Wales had grown from 22 million to 36 million, and the greatly increased population had congregated in urban areas, yet the death-rate, which was 21.4 per 1,000 in 1871, was 13.3 in 1916. In 1871–80 the expectation of life in the case of males was 41.4 years; in 1910–12 it was 51.5 years, so that in the period of forty years ten years had been added to the expectation of life. The figures for females were respectively 44.6 and 55.4. He believed that these figures constituted a higher expectation of life than was to be found in any other country. He regretted that many of the advocates of the Ministry of Health had painted the picture of the health of this country far too black. He regretted very much that the Prime Minister should have said he doubted that there was a first-class country in the world where less had been done to organize the forces that made for the health of the nation. On the contrary, it might be stated truly that in no other country in the world had so much been done as in England. Lord Downham went on to make a few criticisms on the bill. It gave the Minister no new powers. It would not necessarily transfer, for example, such a matter as medical education; the Minister would continue to do what the President of the Local Government Board had done in the past—that is, would keep in touch with any person responsible for medical education. Nothing was more important than to have a far better system of educating doctors and re-educating them. The Minister of Health would not have power to make grants for the improvement of the system of medical education. The bill did not propose that the Ministry of Health should take over the power of the Privy Council to nominate five members of the General Council, which regulated all matters of medical education.

Viscount Haldane said that the training of doctors and the future enlargement of their course was a very great subject, and one which required to be dealt with, but it belonged to an entirely different service than that of health. It belonged to the service which was performed by the universities and the great medical schools. He hoped that by means of consultative councils and by close co-operation between departments the Ministry of Health would keep in relation with all bodies which did medical training. He hoped to see a time when the Army, Navy, and the Air Medical Service would be looked upon rather as groups which had taken place within a common atmosphere than as independent organisms.

Viscount Knutsford approved the proposal that the Medical Research Department should not be under the Minister of Health, but he wanted an assurance that in the transfer it would not be stopped for want of funds. At the present the miserly grant for it was only £50,000 a year, worth to-day between £30,000 and £40,000. The country saved £50,000 in treating what was called D.A.H. in one year in one command of the army. The country was paying at one time £1,000 a week to poor girls poisoned by T.N.T. The Medical Research Department saved that by finding out the cause and stopping it. Therefore he hoped that when the department was turned over to the Privy Council it would be treated adequately. The work of the Local Government Board in the past was not lost, but only, as the tombstone said, "gone before." It was a good example to be improved. There might be disappointment with this bill, but it might be hoped that the Minister of Health would soon bring forward something better. In regard to the transfer of the duties of the National Insurance Commissioners, Lord Knutsford reminded the House that 20,000 doctors would be placed under the Minister of Health. There would be great disappointment indeed if the Minister continued the very low standard that was obtained from panel doctors; the term "panel doctor" was ridiculed by the country. It was not the fault of the doctors; it was because the power given to them was so very limited. All that a man got, if he went to a panel doctor, was just what a general practitioner could give him and nothing more. When any one needed an operation, or the help of a specialist, or had a serious illness, was it right that he should depend upon charity? The voluntary hospitals had done their best under very difficult conditions, but naturally they had failed to meet the wants of the nation. The Minister of Health would be expected to improve the medical attention that the country was getting and paying for. There was need for a very careful survey of the country area by area, setting out what facilities the people had and the prevalence of illness in each district. In the country the difficulty of getting surgery and medical help for a man who was seriously ill was enormous, and that must be remedied. It was necessary, of course, to improve the preventive side of medicine as well as the curative sides. All that the panel doctor was now concerned with was treating the number of people in his district; the more he treated the more he got paid. No complaint should be made on that score, but not sufficient attention was being given to the normal person and to the early stages of disease. There was no real intelligence department. The preventable infant mortality was something like 1,000 a week. Such matters must not be allowed to drift. He hoped the bill would be passed unanimously so that the Minister might feel that Parliament was behind him in his endeavours to improve the health of the people.

Lord Willoughby de Broke remarked that although many honours lists had been issued, there was no representative of medical science in that House.

Lord Bledisloe, speaking for those who would have to apply in the counties the provisions of various Health Acts, welcomed the measure. He was somewhat alarmed, however, at the subsection which seemed to contemplate the retention of all the officials of all the various departments to be unified by this bill. He feared that the consultative councils might form an undesirable buffer between the Ministry of Health in London and the various local authorities and divest the Minister of Health of full ministerial responsibility. He welcomed the proposal to leave research out of the sphere of the new department, because there were many departments carrying on in watertight compartments work which ought to be aggregated. For instance, a good deal of work being done by the Board of Agriculture in the sphere of veterinary science, comparative physiology, and therapeutics, was in other countries far more closely associated with research work for the benefit of human beings than in this country.

After remarks by Lord Tenterden and the Bishop of Llandaff, Lord Buckmaster thought that one of the most important duties that the Ministry of Health could undertake would be the control of advertisements relating to patent medicines and foods. The feeding of children by patent foods was in the case of many a positive danger to health.

Lord Boston, referring to the clause as to the constitution of a Board of Health in Wales, thought there would be profound dissatisfaction if it were left to the Minister to appoint such officers as he thought fit.

Viscount Sandhurst, in a brief reply, said that in so far as local authorities overlapped, an endeavour would be made to disentangle them. The bill did not touch hospitals. He knew the lamentable waiting lists that existed at the various hospitals, and if it was found that there must be more hospital accommodation, more must be provided. But that belonged to the second phase. If the central body was established the health of the country could be reorganized. The bill was then read a second time, and referred to a committee of the whole House.

THE MEDICAL ADVISORY COUNCIL.

Our lobby correspondent writes that it is expected that the Ministry of Health Bill will be passed through Parliament within a fortnight. As soon as it is on the statute book, Dr. Addison will proceed to the appointment of the various consultative councils. The selection, subject to the acceptance by Parliament of the draft order recently issued, will rest entirely with the Minister. It is understood that representations have been made to Dr. Addison in regard to the nominations for the consultative medical council. It has been suggested to him that he might be disposed to accept nominations by various medical bodies, and that in this way the council could be made of a representative character. According to rumour in the lobby of the House of Commons, Dr. Addison is not inclined to take this view, although he will welcome the submission of names by the different bodies, and is likely to make up the council by the aid of the recommendations thus given. In short, it appears that his inclination is to make the appointment mainly from such lists, but not to take the nominations as directly representing different bodies. He will rather go through the lists for the choice of the names that seem most appropriate to him. The council, it will be remembered, is to consist of not more than twenty members.

The Pensions System and Medical Boards.

EVIDENCE OF THE SECRETARY TO THE PENSIONS MINISTRY.

The first sitting of the Select Committee on Soldiers' and Sailors' Pensions was held at the House of Commons on April 30th, under the chairmanship of Sir Montague Barlow, and the second on the following day. Both sittings were wholly occupied by hearing the evidence of Sir J. Albert Flynn, Acting Secretary to the Ministry of Pensions.

Sir J. Albert Flynn said that the Ministry inherited the flat-rate pension machinery of the Admiralty and the War Office and the supplementary (war) machinery of the Statutory Committee for advances to meet cases of individual hardship and provide treatment and training. The Ministry had introduced alternative pensions, had made treatment and training a reality, had developed the local machinery to inquire into individual cases, had arranged for advances by local committees in anticipation of the possible award of pension, and had established local officers directly under the Ministry. The problem was how to decentralize and yet co-ordinate the outlying staff. The ideal of the future was to begin with the man and end with the pension. One of the difficulties was that the Ministry in London was housed in forty different buildings. The correspondence amounted to 40,000 letters a week.

The clerical staff referred to the doctors all cases in which the claim was for eyesight, cancer, etc., or where more than one disability was set forth; about 40 per cent. of the cases were referred to the doctors at Chelsea, and in about half the cases Chelsea altered the recommendations. The board at Chelsea did not see the men whose cases were referred to them. Investigation went to show that either the Revising Board was unnecessary and made mistakes, or the ordinary medical boards were not competent. Sir A. Griffith-Boscawen, when he was Parliamentary Secretary to the Pensions Ministry and Chairman of the Advisory Board, held that the ordinary boards as a whole were much too hard on the men. It was hoped that with decentralization difficulties would be overcome. The Ministry had taken over the beds from the National Service Ministry. The Director-General was very keen to improve the boards. If they could be relied upon there would be no need to revise the decisions. Tribunals were to be set up in all parts of the country, so that it should be easy for men to appeal locally. There was evidence that the ordinary boards were often very perfunctory. The reviser was usually a specialist, an earnest man who put himself into his task. The witness repeated that only cases presenting some unusual feature were referred to Chelsea. A man could appeal to the Ministry upon the question of the amount awarded, but it was only as to attributability that he could appeal to an outside tribunal. He agreed that it would be better to refer all cases either to a doctor or to a higher tribunal. It was undesirable to leave the clerical staff to decide whether a medical board was right or wrong.

Sir Albert Flynn, continuing his evidence on May 1st, expressed the opinion that the naval medical boards were more reliable than the army, though perhaps a little harder. He had come across cases which made him think that the medical boards were sometimes very profoundly wrong. He did not think that men were averse from appealing. The remedy for the situation was, in his opinion, properly selected boards of medical men who did nothing else. At first it was agreed to make the decisions of the pensions tribunals final; then it was resolved to make them advisory; the Ministry now held it would be better, after all, to leave the decisions to the tribunal, providing that such decisions were within the terms of reference. That question was now before the Treasury. With regard to delays in dealing with appeals, he said that there were about 10,000 to be disposed of, and they were coming in at the rate of about 400 a week. There had been 20,000 appeals, and it had taken as much as eight or ten months to get a decision; but there were now eight tribunals, and they might be brought up to thirteen, or even more. It would take eighteen or twenty weeks to wipe out arrears. The Ministry had dealt with 14,000 officers' pensions, but, owing to altered arrangements of the War Office, there were 50,000 to 60,000 cases; if a settlement could not be made to officers within a month, advances were made on account.

Sir Albert Flynn continued his evidence on May 5th. He was of opinion that the awarding of pensions to women and children had been quite satisfactory. So far as he knew there was very little delay in the grant of pensions to widows, and there was really no excuse for delay, as twenty-six weeks' notice was given to them. A few months ago there was a sudden rush for awards for dependants, but special arrangements had been made to meet it, and the congestion it was hoped would be relieved in two or three months. The delay as to widows' pensions was in cases where difficulties arose as to whether the man's death was due to or hastened by service. He would be glad of particulars where there had been delays in awarding pensions to widows. Alternative pensions were based on pre-war earnings, and what men were now capable of earning. The difficulty was to decide a man's present capability of earning. The actual pre-war earnings were reckoned up to 50s., and half between 50s. and 100s. The original idea of the pension was that men and their dependants should not be worse off from the fact that the men had been in the service. The Ministry was well aware that there had been complaints, and the matter was being thoroughly reconsidered. Sir John Butcher, a member of the committee, suggested that in view of the increase in wages it was unfair to assess a man's possible earnings on pre-war figures. Sir Albert said that the matter was under personal consideration of the Minister. The assessment had to be left to the "skilful and kindly consideration" of the department to do the best they could.

Anaesthetics for Operations on Animals.—The second reading of the Animals Anaesthetics Bill, which would make it an offence to perform certain operations on horses and dogs without the use of an anaesthetic, was given in the House of Commons on May 2nd. It is a private member's measure, introduced by Lieut.-Colonel W. Guinness, who said it was designed to correct a remarkable omission in our present law regarding cruelty to animals. In cases in which live animals were cut or vivisected for the purpose of research the application of anaesthetics was compulsory, but in a far larger number of cases in which research was not the object of operations—for they were carried out merely for the convenience or profit of the owner—such care was not enjoined nor was any humane device prescribed to prevent pain. The bill had been modified to meet the views of agriculturists and veterinary surgeons. It would not apply to the castration of pigs and bulls, nor to horses under two years old. Sir Watson Cheyne, Sir Wm. Whitla, Colonel Raw, and Dr. MacDonald, amongst other members who took part in the discussion, expressed the sympathy of the medical profession with the bill. Sir Watson Cheyne said he had been horrified to learn what had been done without the use of anaesthetics. Sir Wm. Whitla thought that the measure ought to be made to apply to the docking of terriers' tails. Colonel Raw was of opinion that for docking local anaesthetics would be more efficacious than general anaesthetics. Dr. MacDonald pointed out that under the Dogs' Bill, if pain continued after an operation, an animal had to be destroyed, but in the present measure there was no provision of the kind.

Medical Service under the Insurance Acts.—Sir Kingsley Wood asked the Secretary to the Local Government Board, as representing the Insurance Commissioners, on May 6th, whether any revision in the terms of insurance practitioners were contemplated; and, particularly, whether any extension of the present medical service was under consideration and could be indicated. Major Astor replied that the original arrangements for the conditions of service of insurance practitioners arrived at in 1912 were to have been subject to revision in 1915, but, owing to war conditions, that revision was postponed. In March of last year, as a result of a deputation to the Chancellor of the Exchequer, certain temporary augmentation of the insurance practitioners' remuneration was agreed to by the Government on war grounds; and, at the doctors' request, preparatory to revision both of the services to be rendered and of the remuneration to be paid, preliminary discussions were entered into on both these aspects of the matter, and also as to the possibility and desirability of some extension or enlargement of the existing services, with a view to arriving at some new arrangements to take effect (it would be hoped) in 1920. The issues involved were complicated and difficult, and needed further consideration and discussion with the Advisory Committee and others concerned. No statement could be made at present.

THE school of phthisiology established by the physicians of the Dispensario Antituberculoso Maria Cristina was recently formally inaugurated in Madrid in the presence of the Queen and a distinguished assembly. On March 28th thirty-eight practitioners of Madrid and the provinces had entered their names. Two courses of three months are to be given in the year, in the spring and in the autumn. It is intended that these shall be as practical as possible. The school has no State grant.

Scotland.

DIRECT REPRESENTATIVE, GENERAL MEDICAL COUNCIL.

An election for a direct representative of the medical profession in Scotland on the General Medical Council will take place next November. We understand that the sitting representative, Dr. Norman Walker, who has held the position since January, 1907, will stand again, and that Dr. Michael Dewar will also be a candidate. Dr. Norman Walker has been the convener of the Scottish Medical Service Emergency Committee and has in other capacities done a great deal of public work for the profession; his record in this respect is well known. Dr. Dewar comes forward as a general practitioner; he has done much work for the profession in Scotland in connexion with the Insurance Act, as secretary of the Edinburgh Branch, and as a member of the Central Council of the Association.

RESEARCH SCHOLARSHIP IN MENTAL AFFECTIONS.

At the annual meeting of the Scottish Western Asylums Research Institute in Glasgow Dr. Landel R. Oswald stated that he had received from an anonymous donor, in commemoration of the coming peace, a sum of money which would be sufficient to give an income of £250 a year for the endowment of a scholarship for research work in mental affections. The Research Institute was invited to appoint two trustees to co-operate with others in administering the fund. The scholarship will be founded on the lines of the Beit scholarships, and will be open to research students throughout Scotland. The hope was expressed that the institute might soon be in full working order again, and the Executive Committee was instructed to take steps towards securing a new director, and empowered to offer a salary not exceeding £600 a year. Further information regarding the post can be obtained from the Secretary, Dr. James H. MacDonald, Hawkhead Asylum, Crookston, Cardonald, Glasgow.

MEDICAL PRELIMINARY STANDARD.

The Scottish Universities Entrance Board has notified that it proposes to issue for the consideration of all universities a general regulation providing that the standard of preliminary education for admission to a Faculty of Medicine shall be assimilated to that for admission to the Faculties of Arts and Science. Sir Donald MacAlister, speaking on the subject at the Glasgow University Court on April 24th, said that the regulation, which expressed the opinion of the senate and the court, would not come into operation immediately.

TREATMENT OF VENEREAL DISEASES IN EDINBURGH AND THE LOTHIANS.

On March 1st a beginning was made with the putting into operation of the scheme for the treatment of venereal diseases prepared by Dr. Maxwell Williamson (the medical officer of the city of Edinburgh) in association with the Health Committee of the Town Council. The scheme is intended to embrace Leith and the Lothians. Arrangements have not yet been completed whereby the full benefit expected to be derived from the systematization and extension of the treatment and prevention of the venereal diseases in this part of the country will be gained; but, on the return from military service of Colonel L. Harrison, D.S.O. (who has been appointed to take general charge of the work), the scheme in all its details will be seen in action.

In the meantime arrangements have been made with three of the Edinburgh hospitals—the Royal Infirmary, the Royal Maternity, and the Women's Hospital (Bruntsfield)—to supply beds for indoor treatment. At the infirmary and maternity hospitals there are also clinics for outdoor cases. In the former institution male patients will be seen on two mornings and one evening a week, and females on two other mornings and an evening. The work in the infirmary—which, pending the arrival of Colonel Harrison, is under the care of Mr. W. S. Stuart, F.R.C.S.Edin.—includes the intravenous injection of neosalvarsan and the other modern methods of diagnosis and treatment. There is a ward for male patients and another for females. The medical practitioners of the district have been supplied with printed instructions enabling them to send their patients with facility and privacy to the places where treatment is given. All the necessary pathological preparations and investigations are carried out within the infirmary itself. In order to maintain secrecy the records of patients are kept under card numbers, and communications regarding them are sent to practitioners under such identification numbers.

At the Royal Maternity Hospital expectant mothers suffering from venereal disease are dealt with. The directors have recently purchased two flats in an adjoining building connected by a bridge with the hospital, for the accommodation of the venereal cases, both those requiring bed treatment and those attending the ante-natal clinic. Since the new premises cannot yet be used, the clinic is being held once a week in the rooms set apart for the ordinary ante-natal clinics held on other days, whilst accommodation for the prematernity venereal patients who require bed treatment is being provided in another house in the immediate neighbourhood of the hospital which is ultimately to be used as a students' residence. The venereal diseases department of the hospital has been placed under the care of Dr. J. W. Ballantyne, who is also in charge of the general ante-natal work. In the meantime the necessary pathological investigations will be carried out at the Royal College of Physicians' Laboratory.

Married women suffering from the venereal diseases will be received at the Women's Hospital, Bruntsfield. No outdoor clinics are being held at this hospital; but cases are seen at three subsidiary centres connected with maternity and child welfare. The work at this hospital and at these centres is under the charge of the staff belonging to it. Medical practitioners who desire to treat their patients at home may, under certain restrictions, obtain consultations with the clinical medical officer. They may also have pathological preparations (blood smears, etc.) examined at the Royal College of Physicians' Laboratory, where they may be sent, or to the office of the Public Health Department. Drugs for the treatment of the various forms of venereal disease will be supplied, free of cost, to medical practitioners, but it should be noted that these include only, in accordance with the instructions of the Local Government Board, salvarsan or its substitutes. The Local Government Board has also laid down certain rules restricting the distribution of such drugs to practitioners having the necessary training or experience in their administration; these rules are detailed in the scheme sent out by the Health Department. Already a very considerable response on the part of the affected public has been made to the various facilities which are afforded them under the scheme.

Similarly in Glasgow steps are being taken in the same direction. The Local Government Board for Scotland has approved a scheme, and a circular explaining its operation has been issued by the medical officer of health, Dr. A. K. Chalmers. The treatment centres comprise the dispensaries of the Royal, Western, and Victoria Infirmaries, the Hospital for Women, Baird Street Reception House, and Bellahouston Dispensary. Certain days and hours have been fixed for the giving of free medical advice and treatment.

Ireland.

THE MINISTRY OF HEALTH BILL.

As reported in this column on April 19th, a very large and influential meeting of the medical men of the North of Ireland, held in the Medical Institute, Belfast, to discuss the Ministry of Health Bill as applied to Ireland, decided to appoint a deputation to wait on the Chief Secretary for Ireland. Advantage was taken of Mr. Macpherson's visit to Belfast, and the deputation was courteously received by him in the Belfast City Hall on May 1st. Mr. R. J. Johnstone, F.R.C.S.Eng., who had presided at the meeting of medical men, introduced the deputation, which was large and representative, and included the President and Secretary of the Ulster Medical Society and the President and Secretary of the Ulster Branch of the British Medical Association. Sir John Byers and Dr. Gardner Robb explained clearly and fully the views of the profession in the North of Ireland. Dr. Henry of Comber, County Down,

on behalf of the county, confirmed these views. The proceedings were private, but it may be stated that the Chief Secretary explained the whole situation, and spoke sympathetically regarding the views put forward by the deputation. At the conclusion, Mr. John Campbell, F.R.C.S., thanked Mr. Macpherson for granting the interview and for his courteous and sympathetic reception.

India.

THE COMMITTEE ON MEDICAL SERVICES IN INDIA.

THE committee appointed to report on the reorganization of the medical services in India has made such good progress with its inquiry, under the chairmanship of Sir Verney Lovett, K.C.S.I., I.C.S., that its report is probably already in the hands of Government. The other members of the Committee are Major-General G. Cree, C.B., C.M.G., A.M.S., D.D.M.S. Lucknow Division; Major-General P. Hehir, C.B., C.M.G., C.I.E., I.M.S., D.D.M.S. Northern Command; Major-General H. Hendley, K.H.S., I.M.S., D.D.M.S. Quetta Division; Major-General G. G. Giffard, C.S.I., I.M.S., Surgeon-General to the Government of Madras; Mr. S. R. Hignett, C.I.E., Home Department; Lieut.-Colonel A. Sharp, C.M.G., Deputy Secretary Army Department; Lieut.-Colonel G. B. A. Rind, Adjutant-General's Branch Army Head Quarters; Colonel H. E. Banatvala, C.S.I., Inspector-General of Civil Hospitals and Prisons in Assam; Lieut.-Colonel Bhola Nauth, C.I.E., I.M.S.; and Sir T. B. Nariman, a private practitioner of Bombay. The secretary is Major A. A. McNeight, I.M.S., D.A.D.M.S. Army Head Quarters.

MEDICAL SCHOOLS AT ALLAHABAD.

The Chancellor of the University of Allahabad, speaking at the annual convocation, took a hopeful view of the future of higher education in the province. The policy of the Government of India, he said, was to restrict the area over which the affiliating universities had control, by securing a university for each of the leading provinces and creating new local teaching and residential universities in harmony with the best opinions as to the right road to educational efficiency. The new Benares Hindu University was not a principal institution, but it served a large number of people. Funds were being collected for a Muslim university at Aligarh, and new universities at Lucknow and, later on, at Agra, were in contemplation. Colonel Mactaggart, I.M.S., in submitting the medical budget to the U.P. Legislative Council, spoke of the proposal to start a new medical school at Allahabad. An initial expenditure of about fifteen lakhs would be required and recurring expenditure of about one lakh. He had no doubt that Government would finance the scheme, and as a pledge of its intention a sum of 15,000 rupees had been provided in the budget for next year for the acquisition of a site for a new medical school.

THE HEALTH OF MADRAS.

The Madras Presidency Health Association was inaugurated recently at a largely attended meeting held at the Senate House, with the Governor in the chair. The health of Madras is far from what it ought to be, and the new association has been formed to carry on a campaign against disease and dirt. In this movement it is hoped to secure the co-operation of all the educated classes throughout the Presidency, and two influential committees have been elected—a general executive committee with the Governor as president, and a town branch committee with Sir William Beardsell as chairman, Major Elwes, I.M.S., as secretary, and Sir Bernard Hunter as treasurer. The association should be a power for good, and will aim at enlisting the sympathies of educated Indians, without whose support the movement cannot achieve its purpose.

HOUSING IN BOMBAY.

The Government of the Bombay Presidency has decided to grant assistance to co-operative societies for the encouragement of house building on approved sanitary lines. A sum of five lakhs of rupees (£33,000) will be allotted in rotation to approved societies; interest at the rate of 6 per cent. will be charged, except in cases where there are strong grounds for accepting a lower rate.

RED CROSS WORK IN INDIA.

The St. John Ambulance Association and Red Cross Society in India have commenced the civil work which is to be a feature of Red Cross work in the future. At a recent meeting of the Punjab Branch the President, who is the Lieutenant-Governor of the Province, referred to the excellent work which had been done by members of the St. John Ambulance Brigade during the influenza epidemic and small-pox outbreak. Two lakhs of rupees (£13,000) were allotted for an extension of the scheme.

Correspondence.

DISAPPOINTMENTS AFTER GASTRO-ENTEROSTOMY.

SIR,—Dr. Robert Hutchison has called attention to a matter of much importance to the clinical physician—namely, the not infrequent discomforts that persist after or follow the operation of gastro-enterostomy. Within the last few years my own attention has been much called to the subject by the cases I have encountered, and I have come to the conclusion that, apart from pain originating in other organs, pain arising in the stomach and duodenum is due to one of the following three causes:

1. The persistence of an unhealed ulcer. Some surgeons boast of the fact that after a gastro-enterostomy operation a patient can be up and about and on normal diet within a few days. This is bad practice. In order to allow the ulcer, for which the operation is done, to heal properly, a lengthy period of rest in bed, followed by careful dieting for months, should be enjoined. At any rate, if such a course is adopted subsequently, it is generally efficacious, but obviously it can be carried out with less trouble and with less expenditure of the patient's time immediately after operation.

2. The formation of a gastro-jejunal ulcer. This is a more common occurrence than is generally believed. The pain is usually strictly localized and an area of tenderness can be detected. In treatment a rest and dietetic cure is indicated, but is, as Dr. Hutchison points out, rarely successful. In almost all cases a further operation sooner or later becomes necessary, and as a rule results are good. In addition to avoiding unabsorbable sutures, it is possible that performing the operation without clamps may diminish the incidence of these ulcers.

3. In some cases the pain is, I am convinced, produced by the forcible contractions of the stomach directed towards the pylorus. If a stomach is examined at a long interval after operation, the pyloric pouch is almost invariably found dilated and its muscular wall hypertrophied, pointing to the presence of the peristaltic waves to which I allude; *x*-ray examination will indeed at times enable one to see these waves, and patients will tell one that the pain is severe and of a spasmodic nature when one is actually observing the gastric contractions. The cases in which I have seen them were ones in which for some reason or other the new opening had not been made as close to the pylorus as is customary, and their existence as a cause of pain is an extra reason for the rule that the junction should always be made as close to the pylorus as is possible.—I am, etc.,

T. GILLMAN MOORHEAD, M.D., F.R.C.P.I.

Dublin, May 3rd.

HYPNOTISM, SUGGESTION, AND DISSOCIATION.

SIR,—Dr. Mercier is mistaken in thinking that I made, or even suggested, any imputation on his medical knowledge and practice to the readers of *The Times*. I am not quite so young as that. He had mentioned the name of the illustrious Charcot in connexion with a statement as to the difficulty of bringing patients out of the hypnotic state and as to the therapeutic value of hypnosis. A rapid calculation showed me that the Salpêtrière school had its inception about forty years ago. Hence my reference to this figure. Dr. Mercier is too eminent a scientist, and too well known to the readers of *The Times*, to fear misunderstanding in this matter.

Nor did I state, or even suggest, that he was ignorant of the hypothesis, theory, or fact of mental dissociation. I referred to mental dissociation in order to be able to

explain the rationale of a therapeutic method involving light hypnosis which *is* new, and may be unknown even to Dr. Mercier. Hypnotism is a mysterious cloaked figure in the imagination even of many readers of *The Times*, and it may be a public benefit to twitch her mantle from her face.

I feel flattered to find that Dr. Mercier credits me with the view that dissociation is both a theory and a fact. For that is just what it is! I prefer to call it a fact because, like all facts, it is very stubborn unless properly treated. But all facts are shot through and through with interpretation, as every logician knows, so if people call them theories it doesn't much matter.

Dr. Mercier will never use that suit of mourning for the obsequies of mental dissociation. If he did attend a funeral it was a mock one, or else the place of the principal performer was taken by an understudy. Dissociation is as long-lived as association, which Hume compared to the law of gravity, and it is remarkable how many burials it survived during the late war. I found it present in a marked degree in hundreds of my patients on the Somme, in the form of loss of memory for what happened to them after the shell had burst. But light hypnosis always restored the memories, so they were not really lost, but only dissociated.—I am, etc.,

WILLIAM BROWN.

Psychological Laboratory,
King's College, May 5th.

A WAR COMRADES' CLUB.

SIR,—Captain K. M. Walker and "Late Surgical Specialist B.E.F." have raised a very important subject, and I am convinced that the majority of those who have served abroad are in sympathy with the project.

How is such an organization to be formed? During the South African war Dr. F. E. Fremantle and myself organized a South African civil surgeons' dinner, and these dinners were held at first annually, and later triennially up to the outbreak of the great war. The small numbers concerned made it comparatively easy for us to communicate with all the civil surgeons, and involved a comparatively small expenditure of time and money.

To organize an Expeditionary Forces Medical Union (or club) which might embrace over 10,000 members would involve a considerable expenditure of time and money. No one man, I imagine, unless a paid official, could undertake the task. Might it not be possible to inaugurate such a society with the help of the Royal Society of Medicine? Might not the new union be affiliated to the Royal Society and its members become *ipso facto* members of the new Naval and Military Section?

The club, whether called the War Comrades' Medical Club or the Expeditionary Forces Medical Club, should in my opinion be open only to those who have served overseas. There should be an annual subscription and an annual meeting followed by a dinner in London. Once established, branches could be formed in various parts of the United Kingdom and overseas. If Captain Kenneth Walker would appoint himself provisional secretary and call a meeting through the medical press (if the Royal Society of Medicine would lend a room), the constitution of the club could be discussed and a provisional committee elected.

I agree with "Surgical Specialist" that Sir Anthony Bowlby is the man to preside if he will.—I am, etc.,

London, W., April 30th. C. GORDON WATSON.

WELSH MEDICAL COMMITTEE.

SIR,—I am glad my letter was the means of eliciting the information that the Council, at their meeting on April 16th, decided to have the Welsh Medical Committee (created before the war) launched at an early date, for no mention of that momentous fact (to us Welshmen) was made in the Council's report, in spite of its exhaustive character, and that special sections were devoted to Scotland, Ireland, and the overseas branches respectively. Let it be hoped that this is the last time for Wales to be thus left in the cold, or merely treated as an integral part of England in Association matters.

Wales having now secured a separate Health Board under the Ministry of Health and a separate Welsh Committee of the British Medical Association, it is manifest to all that the existing groupings of constituencies for the purpose of electing members on the Council cannot stand, and this matter should be threshed out by the Representative Body before it accepts the invitation of the Council to transfer the power to prescribe groupings to the latter.

In the light of the present universal conviction as to the respect and consideration due to nationalities, however small, how monstrous it seems that while England holds fifteen out of twenty-four seats on the Council (under By-law 46a), and that while Scotland and Ireland have each four seats on the same, Wales is limited to one seat, while she has to find room even on that seat for Shropshire.

Counting of heads must, of course, always remain a consideration in these matters, but national self-consciousness should also be adequately respected. Wales should have at least four seats to England's share (at present 15) on the Council, not necessarily by reducing England's total, but perhaps by creating additional seats.

I intend asking my Division to express an opinion on this matter, and perhaps other Welsh Divisions would like to follow suit.—I am, etc.,

Criccieth, May 5th. E. LLOYD OWEN.

WOUND SHOCK.

SIR,—I should be grateful for permission to correct a misinterpretation of my remarks on wound shock at the Special Clinical Meeting. In your account, published April 26th, p. 525, I am represented to have said that "in civil life, owing to want of muscular relaxation, gas-oxygen anaesthesia failed in abdominal surgery." This is the reverse of my intention. What I did say was that gas-oxygen anaesthesia was of the greatest value in abdominal operations of civil practice, but that the best results could only be obtained if the abdominal wall were infiltrated before incision with a solution of novocain and potassium sulphate, in order to ensure muscular relaxation.—I am, etc.,

London, W., May 5th. GEOFFREY MARSHALL.

Obituary.

F. J. SMITH, M.D., F.R.C.P.,

Consulting Physician to the London Hospital.

WE greatly regret to record the death, on April 30th, of Dr. F. J. Smith, who was so long on the staff of the London Hospital. He retired from the hospital and from practice last July, when he went to reside at Colyton, Devon, looking forward to many years of tranquillity; unhappily the expectation was not fulfilled, and he died after several months from an illness which afforded no hope of recovery.

Frederick John Smith was the youngest son of the late Mr. John Smith, who practised as a surgeon for upwards of forty years at Castle Donington, Leicestershire. He was born there on August 17th, 1857, and received his early education at Christ's Hospital, where he greatly distinguished himself both in work and games. He won an open mathematical scholarship at Balliol, and went up to Oxford in 1876, taking also an exhibition from his school. He graduated B.A. with honours in the final school of natural science in 1880, and, having won the Letheby scholarship and the first entrance science scholarship, entered the London Hospital Medical School on October 1st, 1881. He had a distinguished career as a student, taking many prizes; he was house-physician to the hospital in 1885, and in that year took the diplomas of M.R.C.S. and L.R.C.P. and graduated M.B.Oxford; in the same year he was elected Radcliffe Travelling Fellow. Two years later he became M.R.C.P.London and F.R.C.S.England; he proceeded M.D. in 1891 and was elected F.R.C.P. in 1895. He was medical registrar of the London Hospital from 1887 to 1891, and in September of that year was elected assistant physician. He became physician in July, 1902. He was at one time lecturer on medicine in the school, but afterwards became lecturer on forensic medicine and medical jurisprudence, subjects to which he had given special attention. He was editor of the fifth, sixth, and seventh editions of Taylor's *Medical Jurisprudence*, and in 1900 published his own *Lectures on*

Forensic Medicine. He contributed also to Knocker's *Workmen's Compensation Act* and to French's *Differential Diagnosis.* He was a referee under the Workmen's Compensation Act and examiner in forensic medicine at the Universities of Oxford, Leeds, and Birmingham. Among other appointments he held that of assistant physician to the Hospital for Diseases of the Chest, City Road, and at the time of his death was consulting physician to the City of London Dispensary and to the National Orthopaedic Hospital. He was much interested in the city medical society, the Hunterian Society, was at one time its secretary, delivered the annual oration to it in 1900, and was its president in 1904–6.

Dr. F. J. Smith was for many years an active member of the British Medical Association, and particularly of the Metropolitan Counties Branch; he was one of its secretaries from 1904 till 1907, and its president in 1914–15, when he delivered an address on modern vascular problems, in which he criticized some recent developments and asked some crucial questions about blood pressure. Dr. Smith was secretary of the Section of Medicine at the annual meeting of the Association in 1901 and vice-president of the same section in 1912; he was for some years a member of the Central Council, and was chairman of the Science Committee from 1912 to 1917. He was a member of the Medico-Legal Society, frequently took part in its discussions, and had been its president.

Dr. Smith was a sound, practical physician, careful in diagnosis, and possessed a knowledge of men and the world which disposed him to treat the patient and not to be misled by some terminological label. The constitution of his mind was critical, and in therapeutics he was ever ready to challenge accepted views, as was well illustrated by his persistent teaching with regard to diet in typhoid fever. As early as 1901 he spoke and wrote in favour of free feeding up to satisfaction of the appetite but starvation when the appetite was in abeyance, free supplies of plain water, and free evacuation by saline aperients, especially sodium sulphate. He had an offhand manner and a very colloquial way of expressing himself, which sometimes misled those who did not know him well; but to his friends "F. J.," as he was always called, was known as a man of wide knowledge and shrewd judgement, always disposed to take a charitable view, always ready to give of his best in any difficulty.

The funeral took place at Colyton, Devon, on May 5th. A memorial service was held on the same day at the London Hospital church, when Dr. Robert Hutchison delivered an address in appreciation of Dr. Smith's fine qualities. There was a large congregation, including Viscount Knutsford, chairman of the London Hospital, and a number of members of the medical and surgical staffs, together with sisters, nurses, and students. The Metropolitan Counties Branch was represented by Dr. M. G. Biggs, and Dr. A. D. Macpherson attended on behalf of the Council of the British Medical Association.

DR. JOHN O'KEEFFE died at his residence, Griffiths Town, on April 25th. He came of a well known Waterford family, was a student of the old Irish School of Medicine, Dublin; he obtained the diplomas of L.R.C.S.I., 1881, and L.R.C.P.Edin. 1886. After acting as assistant to the late Dr. Davies of Ebbw Vale, he went to Griffiths Town as an assistant to Dr. R. Edmunds, and on the latter's death took over a considerable portion of the practice. Dr. O'Keeffe was held in high esteem by both colleagues and patients. A man of strong character who knew his own mind, and whose opinion was not in the slightest disguised. He took a great interest in the affairs of the Monmouthshire Division, served on many committees, and was its chairman-elect at the time of his death. Dr. O'Keeffe was a frequent attendant at the annual meetings of the Association; he visited Canada, and was present at the fateful 1914 meeting at Aberdeen. He was a man of strong physique, and his death at the comparatively early age of 62 must be attributed to the very heavy work of an arduous practice combined with onerous duties at a military auxiliary hospital of 300 beds, and also a smaller hospital of forty beds, both of which he attended without any help during the war. He was senior surgeon and trustee of the Pontypool Hospital, where he rendered willing and honourable service. He held many public appointments; he was M.O.H. of Panteg, medical officer Panteg Union Workhouse, and surgeon to Baldwin's works. His colleagues will greatly miss his hearty laugh and warm handshake. He leaves a wife and two daughters to mourn his loss.

DR. JOHN MARSHALL of Wickford, Essex, died on April 19th, aged 70, after a short illness. He was educated at Guy's Hospital, and took the diplomas of M.R.C.S. and L.S.A. in 1871. He was a district medical officer and public vaccinator of the Chelmsford Union, and a member of the Mid-Essex Division of the British Medical Association. He leaves a widow, two sons, and a daughter.

IN the short obituary notice of Colonel ROBERT CALDWELL, A.M.S.(ret.), published on April 26th, reference to his service during the war was inadvertently omitted. He was officer in charge of the Alexandra Hospital, Cosham, and practically throughout the period of the war was responsible for the difficult duties connected with the V.A.D. hospitals affiliated to the Alexandra. His courtesy to those connected with the V.A.D. establishments won the esteem of all with whom he came in contact.

MAJOR MAURICE NASMYTH PERRIN, Royal Air Force, was killed in a flying accident on April 28th, on his 32nd birthday. He was educated at St. Bartholomew's Hospital and at Cambridge, where he graduated B.C. in 1913. He took a temporary commission as lieutenant in the R.A.M.C. on August 16th, 1914, in the first fortnight of the war, was promoted to captain after a year's service, and recently transferred to the Medical Branch of the Royal Air Force with the rank of major.

CAPTAIN PETER STURROCK, R.A.M.C., died at Waterloo, Liverpool, on April 19th. He took the Scottish triple qualification in 1887, and was in practice at Lenzie, near Glasgow, till he took a temporary commission as lieutenant in the R.A.M.C. on September 1st, 1916, being promoted to captain on completion of a year's service.

Private Alexander Forbes Stuart, R.A.M.C., who died last month at Noranside Sanatorium, Forfarshire, aged 21, from disease contracted on active service at Salonica, was the youngest son of the Rev. F. W. Stuart, of Gortly, and was a medical student prior to his enlistment. He was a younger brother of Captain F. W. Stuart, R.A.M.C. (temporary), at present serving in Germany.

A West window light has been dedicated in All Saints Church, Helmsley, Yorks, to the memory of Lce.-cpl. Frederick Henry Dowker, 1st Sportsman Battalion, only son of the late F. W. Dowker, surgeon, who was killed in Delville Wood, July 27th, 1916. The window was put in by his mother and sisters.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on May 2nd the following medical degrees were conferred:

M.D.—E. A. Dyson.
M.B., B.Ch.—*R. H. O. B. Robinson, A. H. J. Smart,* J. V. Fidian.
M.B.—H. G. Oliver.

*Admitted by proxy.

QUEEN'S UNIVERSITY, BELFAST.

DR. THOMAS SINCLAIR, C.B., Professor of Surgery at Queen's University, Belfast, has been appointed the representative of the University on the General Medical Council for a period of three years.

The Services.

IN the appointments to the Military Division of the Order of the British Empire, announced in our issue of April 12th, p. 469, the names of the following officers should have been given as Officers of the Order (O.B.E.): Surgeon Commander C. K. Bushe, R.N., Honorary Surgeon Lieutenant J. D. Pollock, R.N.V.R., and Surgeon Lieutenant E. D. Scott, R.N.

AT a meeting of the Paris Société de Pédiatrie, Méry Genevrier and Henyer stated that young children in the territories occupied by the enemies suffered much from the lack of milk, farinaceous, fatty, and albuminous substances. For older children forced labour in all weathers, combined with inadequate clothing, parasites, and epidemic diseases, made the conditions of life most unfavourable. Growth and intellectual development were retarded by two to three years.

Medical News.

AT a meeting of the East Norfolk Division and of the East Norfolk Local Medical War Committee a resolution congratulating Sir T. Jenner Verrall on the occasion of his receiving the honour of knighthood was adopted.

DR. GEORGE HENDERSON (Kirn, Argyllshire) has been presented by his friends and patients with an address and a wallet containing £417 in commemoration of his return to practice after service in the war since 1914.

LIEUT.-COLONEL NATHAN RAW, M.P., who recently resigned the position of medical superintendent of the Mill Road Infirmary, Liverpool, which he had held for twenty-one years, has been presented by the staff of that institution with a five-light silver candelabrum as a mark of respect and esteem, together with a book containing the subscribers' names.

COLONEL GEORGE R. MURRAY, M.D., having relinquished the appointment of consulting physician to the Italian Expeditionary Force, has returned to Manchester.

COLONEL SIR RONALD ROSS, K.C.B., K.C.M.G., F.R.S., has been elected a Fellow of the Royal Society of Sweden (University of Upsala) in recognition of his researches in malaria.

HEREFORDSHIRE has appointed a rat-catcher for the county at a salary of £5 a week (£260 a year).

THE Paris Academy of Medicine has decided to erect within its precincts a stele in memory of French practitioners who died as victims to professional duty in the course of the war.

The senate of the University of St. Andrews has resolved to confer the honorary degree of LL.D. upon Dr. W. H. R. Rivers, F.R.S., F.R.C.P., Fellow of St. John's College, Cambridge.

THE late Dr. John E. M. Finch, medical superintendent of the Leicester Borough Asylum from 1869 to 1911, has bequeathed £5,000 for the endowment of a university college for Leicester, in remembrance of his long connexion with the asylum.

AT the annual general meeting of the Lebanon Hospital for Mental Diseases, near Beyrout, to be held at Sion College, Victoria Embankment, next Friday, at 3 p.m., the director, Dr. H. Watson Smith, will give an account of the war-time experiences of the hospital.

THE Norwegian Cancer Fund Committee has collected about £30,000 towards the establishment of a national hospital for the treatment of inoperable malignant disease by radiography and other therapeutic measures and for research on the subject. A special propaganda has been organized to raise additional funds.

DR. M. R. DRENNAN, who graduated in medicine at Edinburgh in 1910, and is a Fellow of the Royal College of Surgeons of Edinburgh, has been appointed professor of anatomy in the University of Capetown. He is an Ayrshire man, and served in the South African Medical Corps during the campaigns in South-West and East Africa.

ACCORDING to a recent article in the *Pioneer Mail* there are at present seventy-six asylums for lepers in India. The Mission to Lepers maintains forty-one of these institutions and gives grants in aid to eleven others. The Mission derives most of its money from Britain, but grants are also made by provincial governments. The total number of known lepers in India is said to be over 109,000.

DR. R. F. SHIELDS, of the University of Shantung, has recently finished a translation of Lewis and Strohr's *Histology* into Chinese. An abbreviated edition of Halliburton's *Physiology and Histology* had previously been available to Chinese students, but Dr. Shield's book appears to be the first in their language devoted entirely to microscopic anatomy.

THE Board of Trade has appointed a departmental committee to inquire into the business carried on by industrial assurance companies and collecting societies. The inquiry will not be concerned with life assurance for sums beyond £50, nor with insurance under the National Insurance Act. The chairman is Lord Parmoor, and one of the members is Sir Alfred W. Watson, chief actuary to the National Insurance Joint Committee.

A DISCUSSION on the problem of disablement, with especial reference to the combined treatment and training of injured ex-soldiers, will take place at a meeting of the Hunterian Society to be held at 1, Wimpole Street, W., on Tuesday, May 13th, at 8.30 p.m. Dr. Fortescue Fox will introduce the subject, and Dr. F. H. Humphris will read a short paper on the melted paraffin wax bath. All members of the profession interested are invited.

DR. WILLIAM BROWN, Reader in Psychology in the University of London, began a course of ten public lectures on pathological psychology, illustrated by cases of war neuroses seen in the field and at the base, at King's College on May 6th. Subsequent lectures of the course will be given on Tuesdays at 5.30 p.m.

LIEUT.-COLONEL SIR DAVID PRAIN, F.R.S., I.M.S., has been appointed chairman, and Lieut.-General Sir Alfred Keogh, G.C.B., and Sir Malcolm Morris, K.C.V.O., members, of a committee set up by the President of the Board of Agriculture to inquire into the steps that should be taken to render the work of the Royal Botanic Society of London as useful as possible from the scientific and educational point of view.

THE Committee of Management and the Medical Committee of the Hospital for Sick Children, Great Ormond Street, recently made presentations to Dr. George R. Pirie, of Calgary, Alberta, Canada, who throughout the period of the war has acted as resident medical superintendent, registrar, and casualty medical officer to the hospital. The one gift was a silver casket and the other a dressing case, both suitably inscribed. Dr. Pirie, in acknowledging the gifts, spoke of the great pleasure the work had given him.

THE President and Council of the Medical Society of London were "at home" on Monday evening, May 5th, to members of the Fellowship of Medicine, at the society's house, 11, Chandos Street. Medical members of the Overseas Forces now in London were also invited. After a reception of the guests by the president, Major A. F. Voelcker, R.A.M.C.(T.), Sir StClair Thomson delivered an address on "John Coakley Lettsom and the foundation of the Medical Society of London, 1773." Illustrations of the society's history were exhibited by the help of the epidiascope. At its conclusion an informal conversazione brought a successful evening to a close. About 150 guests availed themselves of the invitation.

HER HIGHNESS PRINCESS MARIE LOUISE visited the Summer Congress of the Section of Laryngology at the Royal Society of Medicine on May 3rd. She was received by Brigadier-General Birkett, C.B., C.A.M.C. (Montreal), Honorary President of the Congress; Dr. James Donelan, President of the Section of Laryngology; Sir Humphry Rolleston, K.C.B., President, Dr. W. Pasteur, Honorary Treasurer, and Mr. J. Y. W. MacAlister, Secretary of the Royal Society of Medicine; and by Dr. Irwin Moore, one of the Honorary Secretaries of the Congress. Her Highness was shown the models of plastic surgery for war injuries from the Queen's Hospital, Sidcup, exhibited by Major H. D. Gillies, R.A.M.C., and also a collection of manuscripts and instruments belonging to Sir Morell Mackenzie, presented to the Royal Society of Medicine by Mr. Mayer.

THE North of England Tuberculosis Association recently arranged a post-graduate course lasting four days, at the Lord Mayor Treloar Cripples' Hospital and College, Alton, Hants. Dr. Gauvain, medical superintendent, gave two lectures daily, each of an hour's duration, and demonstrated many procedures in the conservative treatment of surgical tuberculosis, including aspiration of tuberculous abscesses, a method which has yielded excellent results in spinal caries and hip disease; demonstrations were given also in the wards. Altogether those attending were occupied from 11 a.m. until 7.30 p.m. each day. It should be added that the various bodies defrayed the expenses of their officers attending the course. We are glad to see this evidence of their appreciation of the great importance of surgical tuberculosis as a cause of crippling deformities.

QUEEN ALEXANDRA'S HOSPITAL FOR OFFICERS, established by a committee of which Sir Alfred Mond was chairman, was erected on the southern slope of Highgate Hill, and accepted by the Army Council in March, 1915. The number of beds was originally 26, but this was raised to 33; with annexes at Portland Place and Melchet Court, a total of 57 beds was provided. The result of treatment amid the quiet surroundings and pure air of Highgate was that the number of days of hospital treatment was diminished by about 30 per cent. The good condition of patients after the administration of an anaesthetic was particularly noticeable, the rise of temperature was slighter, and there was greater freedom from bronchial irritation. This was especially the case after nitrous oxide gas and oxygen, which for three years was extensively employed by Captain H. E. G. Boyle, one of the honorary anaesthetists. Mr. Herbert J. Paterson, honorary surgeon in charge, informs us that the total number of officers admitted down to March 20th, 1919, was 839, and on that date 37 remained in the hospital. The number of operations was 581 and of *x*-ray examinations 855. The deaths numbered 8.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocera, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

LETTERS, NOTES, ETC.

GOVERNMENT MOTOR VEHICLE SALES.

IN connexion with the auction sales of motor vehicles no longer required by the Services, motorists are advised by the Automobile Association to avail themselves of expert advice concerning the mechanical condition and value of such vehicles before bidding for them. Communications should be addressed to the Secretary, A.A. and M.U., Fanum House, Whitcomb Street, W.C.2. Members residing in the provinces should communicate with their nearest A.A. branch office.

LITERATURE OF HAEMATOLOGY.

DR. GORDON WARD (The Vine, Sevenoaks) writes: I am endeavouring to make a collection of reprints, etc., on all aspects of haematology. These will be indexed and filed, and may, I hope, be of permanent value. May I ask those interested in this subject to be so good as to let me have any reprints they can spare on the clinical or experimental aspects of disorders of the blood?

THE IDEAL OF THE PROFESSION.

"MAJOR R.A.M.C.(T.)" writes: When you were good enough a week or two ago to give me the hospitality of your columns on the above subject (BRITISH MEDICAL JOURNAL, April 5th, p. 429), I omitted a vital point quite accidentally. "Colonel R.A.M.C.(T.)" inquired why doctors ask "How shall we be defended from the Government?" I think the said Government's action *re* the bonus to panel doctors is a sufficient answer. The sovereign is worth, according to statistics, 9s. 6d., chauffeur's wages, income tax, rates and taxes, and working expenses are more than doubled, and the Government's idea of justice to doctors is 10 to 12 per cent. on one year's income. No other class of workers would have been put off with such an offer.

SPIRIT DUTY (VOLUNTARY HOSPITALS) GRANT.

THE Local Government Boards for England and Wales and for Scotland are prepared to receive applications from voluntary hospitals for grants in respect of payments of duty involved by the use during the year 1918 in these hospitals of duty-paid spirit or drugs containing duty-paid spirits for medical and surgical purposes. Forms of application will be sent only to those hospitals to which a grant was paid last year. Any other hospital which desires to make application should communicate immediately with the Secretary to the Local Government Board for England and Wales or the Secretary to the Local Government Board for Scotland, as the case may be.

PARALYTIC RABIES IN MAN.

AT a meeting of the Académie de Médecine on April 8th Professor Pierre Marie and Dr. Chatelin reported a case of the primarily paralytic form of rabies. The patient, a boy aged 11 years, was bitten by a dog on the upper lip at the end of October. The wound healed rapidly, and no prophylactic inoculation was given, but about five weeks later the child complained of violent headache in the afternoon, and in the evening had an attack of a few minutes' duration, in which he stretched out his arms with the hands clenched, but without frothing at the mouth or losing consciousness. Similar attacks recurred frequently the following night. During the day they were much less frequent, but the child kept repeating that he was dying, and refused to take any food. A few days later the parents noticed that he had complete loss of power in both legs. On admission to the Salpêtrière, about seven weeks after he had been bitten, the child showed flaccid paralysis of the lower limbs, loss of the knee and ankle jerks, some weakness of the upper limbs, and some difficulty in swallowing. There were no sensory symptoms. The rectal temperature was 103.8° and the pulse 118. Lumbar puncture gave issue to a slightly turbid fluid under high tension, containing an excess of albumin and polymorphonuclear leucocytes but no micro-organisms. The following day not only was the paralysis of the upper limbs more marked and the radial and triceps reflexes abolished, but the muscles of the abdomen and thorax were also affected. The sphincters remained intact until a few hours before death, which took place the next day from respiratory paralysis. Histological examination of the nervous system showed a diffuse infiltrative polio-encephalo-myelitis affecting the spinal cord, medulla, pons, cerebellum, and certain regions of the cerebral cortex. Negri bodies were found in the cord and cornu ammonis.

EARLY STAGES OF RABIES IN THE DOG.

J. D. W. sends an account of an experience of his at Easter, 1894, while temporary assistant at a branch surgery in a small colliery town in Lancashire. One morning he went out with the caretaker, who was accompanied by a fox terrier; after nosing about in the ordinary way, the dog suddenly lifted its nose in the air and set up a run of short, sharp, high-pitched yelps, very like the cephalic cry of an infant, but more persistent. The dog ran about taking no notice of its master, and when it got on to a road made straight for home. It went to J. D. W.'s bedroom, where it jumped aimlessly up and down in a recess between the fireplace and the window. Both J. D. W. and the caretaker concluded that the dog was mad, and the latter made an ineffectual attempt to kill it with a hammer. The dog found its way to the kitchen, where its master held it while J. D. W. gave it something out of a bottle labelled "dilute hydrocyanic acid." The only result was that the dog wagged his tail and seemed considerably refreshed. This necessitated another visit to the surgery, when "liq. strych." was found and proved effective. "A point to be noted," he writes, "is that the animal never attempted to bite us. Our victim was buried at the back of the house, but the police, getting wind of it, dug it up and, with the aid of Somerset House, decided that it was a care of rabies. I heard afterwards that the animal had been bitten by another which had gone mad a fortnight before."

THE REVENGE OF THE OLD G.P.S.

[IT has been suggested that consultants and specialists should undertake service under the Insurance Acts. It has also been proposed to appoint medical referees, possibly with some sort of supervisory duties.]

In the not far distant future, when the Ministry of Health
Has added to the Country a vast potential wealth:
When the Clinic and Health Centre are dotted o'er the land,
And the Midwife and the Specialist are walking hand in hand
When the young romantic couples ere deciding on a splice
Explore their family histories under medical advice:
When the new-begotten fetus is not suffered to exist
Till the antenatal expert shall have got him on his list:
When the shy expectant mother runs to study pelvimetrics
And discuss the situation with the expert in obstetrics:
When at last th' Eugenic Infant is permitted to be born
(With the help of a consultant if the perineum's torn):
When the Birth is duly notified—the Health Visitor has called,
And all the latest fashions are properly installed:
When the Baby-Welfare doctor has weighed him with precision,
And strongly recommended prophylactic circumcision:
When every British school-child from its head unto its toes
Has every ailment treated by the special School M.O.s:
When all the sexual functions have been taught him by the Parson,
And he's been to V.D. lectures and appreciates salvarsan:
When he's got a Panel Doctor, for he's now become insured,
And been taught whene'er his finger aches to run and get it cured:
When a Specialist's appointed for eyes and ears and noses,
And we mustn't treat Venereal, still less Tuberculosis:
When there's nothing left for us to do but just to "pass him on,"
And there's nothing we're supposed to know—our occupation's gone.
Then: shall we be downhearted? No, we loudly answer, NO.
There's a brand new speciality and into it we'll go,
We're practitioners of standing—wide experienced G.P.s,
And we'll get ourselves appointed as Medical Referees.
These Consultants must be disciplined—we'll steel our hearts to pity,
And we'll haul them up before the Medical Service Subcommittee:
We'll be "tactful supervisors," and "oh, but 'twill be sweet!"
We'll specialize on Specialists, and comb out Harley Street!

J. W. F.

THE appointment of certifying factory surgeon for Uxbridge (Middlesex) is vacant.

THE appointment of medical referee under the Workmen's Compensation Act, 1906, for the Burnley and Colne and Nelson County Courts, in Circuit No. 11, is vacant. Applications to the Private Secretary, Home Office, by May 28th.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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